

ECONOMIC GROWTH, TRADE POLICY AND

FOREIGN DIRECT INVESTMENT

By

YU-TIEN SU

A THESIS SUBMITTED TO

UNIVERSITY COLLEGE LONDON

THE UNIVERSITY OF LONDON

**IN CONFORMITY WITH THE REQUIREMENT FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY IN ECONOMICS**

LONDON, ENGLAND

2000



Abstract

While openness enables countries to keep pace with the most advanced state-of-the-art knowledge, technology transfers among innovators in different countries facilitate the motivation of research and development and the spread of new knowledge and skills. Rapid technological innovations also motivate trade and international capital flows and speed up the integration process of the world economy. The thesis concentrates on two areas within these ongoing investigations; namely Trade Policy and Foreign Direct Investment (FDI), within the wider discussions of the newly developed models in the theory of Economic Growth, styled "endogenous growth theory".

Based on the models of new growth theory, namely Romer (1987, 1990, 1994), Barro and Sala-i-Martin (1995, Chapter 4, 6, and 7), Aghion and Howitt (1992) and Grossman and Helpman (1992, Chapter 4 and 11), this thesis first focuses on the mechanism through which trade restrictions affect the welfare of a developing country. In Chapter 2, the comparison of the welfare effects of two of the most commonly used trade policies, tariff and voluntary export restriction (VER) is presented. It shows counter-intuitively that a VER may be superior to a tariff.

Second, this thesis focuses on the mechanism illustrating the interaction of imitation, FDI, and economic growth rate of a developing country. Chapter 3 constructs a model which detects the interrelationships between FDI, innovation, imitation and the long-run growth rate. One of

the major findings is that governmental policies to promote local technology activities do not necessarily improve the relative condition of labour in the policy-active country.

Finally, in Chapter 4, this thesis also examines the empirical evidences of the effect of FDI upon the growth of a developing country's economy based on a recent growth model. The Taiwanese economy (1953-1995) is used as an empirical case study. The results show that FDI did play an important role in the manufacturing industry of Taiwan.

Table of Contents

Abstract	2
Table of Contents	4
List of Tables	8
List of Figures	9
Acknowledgement	11
Chapter 1 Introduction	12
1.1 New Growth Theory, the VER and the Tariff	17
1.2 New Growth Theory and FDI	20
1.3 Empirical Test of the Effects of FDI on Growth due to Technology Spill-over	22
Chapter 2 Trade Policy and Technology: When is a VER superior to a tariff? - An Analysis of Trade Policy and Economic Welfare	24
2.1 Introduction	24
2.2 The Model of Product Variety Expansion	30
2.2.1 The Basic Model	30
2.2.2 Calibrations	37
2.2.3 General Approach	43
2.3 The Model of Product Quality Improvement	50
2.3.1 The Basic Model	50
2.3.1.1 $\alpha q > 1$ (Monopoly Pricing)	52

2.3.1.2 $\alpha q \leq 1$ (Limit pricing).....	60
2.3.2 Calibrations	67
2.4 Conclusion	74
Chapter 3 Foreign Direct Investment, Multinational Firms and the Developing Economy	77
3.1 Introduction	77
3.2 The Model.....	83
3.2.1 Consumer Behaviour.....	83
3.2.2 Producer Behaviour.....	86
3.2.3 Innovation and Imitation	89
3.3 Steady-State Equilibrium	94
3.3.1 The Northern Firm	96
3.3.2 The FDI Firm	97
3.3.3 The Southern Firm	99
3.4 Relative Wage Rates	102
3.5 Numerical Calibrations and Policy Implications	106
3.5.1 Calibrations and Policy Implication for Steady-State Equilibrium.....	106
3.5.2 Calibrations and Policy Implication for Relative Wage Rates	113
3.6 Governmental Subsidy to Encourage Local Accumulation of Knowledge	118
3.6.1 The Southern Subsidy to Knowledge Accumulation.....	118

3.6.2 The Northern Subsidy to Knowledge Accumulation	121
3.7 Conclusion.....	125
Chapter 4 The Effect of Technology Spill-over from Foreign Direct Investment in Taiwan.....	130
4.1 Introduction.....	130
4.2 The Model.....	136
4.2.1 FDI and The Model of Learning-By-Doing and Knowledge Spill-over	136
4.2.2 A Time Series Study.....	139
4.2.3 Measuring Physical Capital.....	140
4.2.4 The Initial Stock of Capital.....	140
4.3 FDI & GDP Growth in Taiwan (for All Industries and for Manufacturing Level).....	142
4.3.1 The Trend of FDI into Taiwan.....	142
4.3.2 The Ratio of FDI to Fixed Capital Formation	144
4.3.3 The Industrial Structure of FDI	145
4.3.4 FDI and Manufacturing Industry	147
4.3.5 GDP, FDI, and Cumulative FDI in Taiwan - Overall and Manufacturing	149
4.3.6 The Growth of Output, Cumulative Domestic Fixed Capital Formation (CDFCF) and Cumulative FDI (CFDI) in Taiwan (1953-1995).....	151
4.4 The Evidence.....	156
4.4.1 FDI in All Industries	156

4.4.2 FDI in Manufacturing Industry159

4.4.3 Granger Test and Instrumental Variables Estimation161

4.5 Conclusion..... 163

Chapter 5 Conclusions..... 166

**Appendix I The Values of The Function $\phi(\alpha, \theta)$, α , θ , and The
Equivalent Tariff, τ , in Figure 1 173**

Appendix II List of Variables and Their Descriptions..... 208

Appendix III Ordinary Least Squares Estimation, Test (1)..... 210

Appendix IV Ordinary Least Squares Estimation, Test (2)..... 211

Appendix V Ordinary Least Squares Estimation, Test (3)..... 212

Appendix VI Ordinary Least Squares Estimation, Test (4)..... 213

Appendix VII A Granger Test 214

Appendix VIII Instrumental Variables Estimation 215

References 216

List of Tables

Table 2.1: Welfare loss from tariff and the VER that results in the same quantity of <i>each</i> input as the tariff when $\alpha=1/2$	38
Table 2.2: Welfare loss from the VER that results in the same quantity of <i>total</i> imports as the tariff when $\alpha=1/2$	40
Table 2.3: Welfare loss from tariff and the VER that results in the same volume of <i>total</i> imports as the tariff when $\alpha=1/3$	42
Table 3.1: Calibrations for Steady-State Equilibrium	107
Table 3.2: Calibrations for Relative Wages.....	113
Table 3.3: Calibrations for Relative Wages with Southern Governmental Subsidy of 30%	120
Table 3.4: Calibrations for Relative Wages with Northern Governmental Subsidy of 3%	124
Table 4.1: Growth rates of Gross Domestic Production (GDP), Cumulative Domestic Fixed Capital Formation (CDFCF), and Cumulative FDI (CFDI) at the Aggregate Level in Taiwan, 1955-1995	153
Table 4.2: Growth rate of Gross Domestic Production (GDP), Cumulative Domestic Fixed Capital Formation (CDFCF) and Cumulative FDI (CFDI) in the Manufacturing Industry in Taiwan, 1955-1995.....	155
Table 4.3: Regression for GDP at All Industries Level in Taiwan, 1953-1995	157
Table 4.4: Regression for GDP in Taiwan at Manufacturing Industry Level, 1953-1995	160

List of Figures

Figure 2.1:	Values of $\phi(\alpha, \theta)$, α , and θ that results in the same quantity of total imports as the tariff τ	46
Figure 2.2:	Values of $\phi(\alpha, \theta)$, α , and θ that results in the same quantity of total imports as the tariff τ in a 2-D plane.....	47
Figure 2.3:	Contour values of the function $\phi(\alpha, \theta)$, α , and θ that results in the same quantity of total imports as the tariff τ	48
Figure 2.4:	The 3-D diagram for the function g^m	67
Figure 2.5:	The functional value of g^m with fixed α and various τ	68
Figure 2.6:	The functional value of g^m with fixed τ and various α	69
Figure 2.7:	The 3-D diagram for the function g^λ	70
Figure 2.8:	The functional value of g^λ with fixed τ and various α	71
Figure 2.9:	The functional value of g^λ with fixed α and various τ	72
Figure 4.1:	Arrived FDI Flow into Taiwan, 1953-1995	143
Figure 4.2:	The ratio of FDI to Domestic Fixed Capital Formation, Taiwan, 1953-1995	145
Figure 4.3:	Arrival non-Chinese FDI by Industry, 1987	146
Figure 4.4:	The share of FDI by source, 1953-1995	147
Figure 4.5:	The ratio of FDI to Domestic Fixed Capital Formation in Manufacturing, Taiwan, 1953-1995.....	148
Figure 4.6:	Taiwan's GDP, FDI and Cumulative FDI Stocks in real term, 1953-1995	150

Figure 4.7: Taiwan's Manufacturing GDP, FDI and Cumulative FDI Stocks in real term, 1953-1995	150
Figure 4.8: Growth rates of Gross Domestic Production (GDP), Cumulative Domestic Fixed Capital Formation (CDFCF), Labour (LAB), and Cumulative FDI (CFDI) at the Aggregate Level in Taiwan, 1955-1995.....	152
Figure 4.9: Growth rate of Gross Domestic Production (GDP), Cumulative Domestic Fixed Capital Formation (CDFCF), Labour (LAB) and Cumulative FDI (CFDI) in the Manufacturing Industry in Taiwan, 1955-1995	154
Figure 4.10: GDP by Industry in Taiwan, 1953-1995.....	159

Acknowledgement

My deepest thanks go to Mr. Nicholas Rau and Professor David Ulph, who kindly guided me through the writing of my dissertation. I am grateful to the ORS for the Postgraduate Studentship Award and the Department of Economics at University College London for the Teaching Assistantship that provided to me very helpful financial aid.

I also owe much to my father, sisters and brothers for their endless support, both spiritual and financial, to my study in the United Kingdom. I sincerely thank my teachers and classmates at the University College London who shared with me one of the happiest times in my life. I would never forget the dearest friends who encouraged me through out many difficult times.

Finally, I would like to dedicate the dissertation to those who ever help me at the time I spent in writing the papers and collecting the data. Thank you, everybody.

Chapter 1

Introduction

Recent economic history suggests two important trends in the global economy. First, the world economy has become more integrated. The nations in the world are becoming increasingly open and interdependent. Second, technological innovations have become one of the most important factors that contribute to the growth of an economy. While openness enables countries to keep pace with the most advanced state-of-the-art knowledge, technology transfers among innovators in different countries facilitate the motivation of research and development and the spread of new knowledge and skills. The openness of economies therefore influences the speed of technological spill-over between different countries. On the other hand, rapid technological innovations motivate trade and speed up the integration process of the world economy. The feasibility of getting advanced technology induces countries to adopt a more open trade policy and to provide easier access for international capital flows (i.e., international asset trade).

For many decades a central concern of international economists has been to better understand, explain and forecast the growth of the economies of developing countries. In this thesis, we wish to

concentrate on two areas within these ongoing investigations; namely Trade Policy and Foreign Direct Investment (FDI), within the wider discussions of the newly developed models in the theory of Economic Growth. In addition, we shall also examine the recent growth of the Taiwanese economy as a case study example within development economics.

Recent developments in growth theory, styled "endogenous growth theory", provide a conceptual framework for analysing the interrelationship between Trade Policy, FDI and Growth. Such an analysis is timely in view of the newly found enthusiasm for FDI on the part of most developing countries, especially in Southeast Asia, which recently have suffered severely from financial turmoil and are seeking desperately for foreign support.

The literature on growth theory falls into three broad groups: the early post-Keynesian growth model which emphasised the role of saving and investment in promoting growth (Harrod–Domar and variants); the neo-classical models with exogenous external technical progress (the Solow model and its variants); and the more recent new growth models which focus on the role of R&D, human capital accumulation and externalities. However, the initial wave of the new research of Romer (1986), Lucas (1988) and Rebelo (1991), which built on the work of Arrow (1962), Sheshinski (1967) and Uzawa (1965), did not really introduce a theory of technological change, but merely assumed away the tendency for diminishing returns to the accumulation of capital, including human

capital. In such models endogenous factor accumulation is said to account for growth, and the return to the capital stock in the aggregate does not diminish although the returns to single acts of investment may diminish. The social rate of return to investment must exceed the private rate of return.

It is only with Romer (1987, 1990), Aghion and Howitt (1992) and Grossman and Helpman (1992, chapter 3 & 4) that a framework of new growth theory emerges which incorporates both R&D and imperfect competition. This is the line of thought initially associated with Schumpeter (1934), who built his economic analysis upon deliberate technological change by firms. In these models, firms are willing to invest in developing technology and know-how to establish an edge that is at least temporarily appropriable and thus allows them to stay in a monopoly position that yields a private return. Technological advance results from purposive R&D activity, and this activity is rewarded by some form of ex-post monopoly power. In the meantime when new technology is becoming public knowledge, innovators develop even newer technology and create a new set of temporary monopolies, and the economy continues to roll on.

Technology that researchers generate and cannot prevent from being used by the public often facilitates further innovation. Resources and knowledge can be combined to produce new knowledge, a new good or a better service by a firm, some of which can spill over to the research community of the public domain and can be used by other firms, at least

in some applications. Such distinguishing features of technology or knowledge transfer thereby facilitate the creation of still more technology or knowledge.

The new growth theories also include models of the diffusion of technology. While the product, which embodies new knowledge, can be produced through patents, the knowledge itself cannot be protected. There are various sorts of knowledge spill-over effects, externalities and learning-by-doing, which contribute to growth in the aggregate. Investment in knowledge or R&D is assumed to be subject to diminishing returns, but the utilisation of such knowledge in production activity results in increasing returns due to such externality effects.

This new growth theory has attracted interest from economists in a wide variety of fields including macroeconomics, development, international economics, economic history, econometrics and industrial organisation. Here, a general investigation of the overall debate in growth theory amongst modern economist noted that two areas of current controversy of particular interest relate to Trade Policies and Foreign Direct Investment (FDI) of international capital flows. This suggested that we could concentrate on the mechanisms that link growth theory and the openness of the nations in the world economy, which influence international technological transfers.

Therefore we first focus in this thesis on the mechanism through which trade restrictions affect the welfare of a developing country.

Technologies embodied in goods are conveyed from the developed countries to the developing countries by the trading of commodities. An open trade policy increases the possibility for advanced technologies to spread over from a developed to the developing countries. For this, we explore the comparison of the welfare effects of two of the most commonly used trade policies; namely Tariff and Voluntary Export Restriction (VER). Second, we focus on the mechanism through which FDI of inward international capital flow affects the growth rate of a developing country. Many developing countries seek FDI from countries on the technology frontier. These countries hope to encourage technology transfer from developed countries to improve the technology available to their indigenous firms.

Besides the theoretical framework, we also examine the effect of FDI upon the growth of a developing country's economy based on a recent growth model. Here we use the Taiwanese economy (1953-1995) as the empirical case study. On investigating these more closely, it was realised that some significant additions to existing theory could be made and it is these that this thesis addresses.

1.1 New Growth Theory, the VER and the Tariff

A VER is often criticised for its drawback that foreign exporters can reap the quota rents, and is equivalent to an import quota when quota rent accrues to the foreign exporters. A VER is also equivalent to a country imposing an import tariff and giving the tariff revenue to the foreign exporters, and is therefore generally agreed to be inferior to an import tariff.

Under perfect competition, an import quota causes an efficiency loss similar to a tariff, but increases the loss by losing domestic government revenue (Corden (1974), Dixit and Norman (1980), Woodland (1982), Krugman and Obstfeld (1992) and Helpman and Krugman (1989)). Bhagwati (1965) has shown that, if a domestic firm exercises domestic monopoly power, quotas are inferior to tariffs even if the quota rent is distributed to domestic residents. Besides, a quota leads to a higher domestic price and a lower domestic output than the equivalent tariff. In this regard, a quota is even more anti-competitive than a tariff.

Krishna (1989) further argued that, under a Bertrand oligopoly, a VER set at the free trade level of imports will be preferred by foreign exporters and domestic firms because it allows them to increase their prices. The increase in the domestic firms' profits occurs solely at the expense of domestic consumers, who also pay for the increase in the foreign firms' profits. A VER is therefore more harmful to the domestic country than a tariff.

Traditionally, economists have assumed that all the relevant goods already exist in an economy; It is difficult to construct an economy-wide mathematical model using the fixed costs which are required to successfully generate new varieties of goods or better qualities. It is only in recent literature that economists have started to model the introduction of new goods either as consumption goods or as inputs in production. As a result, new growth theory has successfully built models of R&D and technology, which makes it possible to re-examine the traditional view point towards trade policies.

Romer (1994) used a model with the assumption that a country can import differentiated products, supplied by a monopolistically competitive foreign industry, which constantly successfully innovates, and demonstrated that the welfare loss caused by a tariff to the 'home' country is much higher than the conventional wisdom suggest. This is due to the decrease in product variety that is caused by the decrease of the profitability of foreign exporting firms, and some of the foreign firms eventually stop supplying the domestic market.

By extending the argument, it is not difficult to imagine that through allowing more profitability to the exporting firms and thus increasing the import variety, a VER may be less harmful than a tariff. The new growth theory of variety and quality innovation provides us the opportunity to demonstrate this. Using Romer (1994) and Barro and Sala-i-Martin (1995) and allowing the possibility of introducing more varieties and more better qualities goods into the domestic country, we are able to re-

exam the welfare loss from an equivalent VER that results in the same volume of imports. In Chapter 2, we show that the counterintuitive scenario where a VER is superior to a tariff, may exist.

1.2 New Growth Theory and FDI

Many of the growth-promoting factors identified by new growth theory can be initiated and nurtured to promote growth through FDI. FDI has long been recognised as a major source of technology and know-how for developing countries. FDI not only can transfer production know-how but also managerial skills that distinguish it from all other forms of investment, including portfolio capital and aid. FDI also bridges the benefits of externalities or spill-over effects to host countries.

The knowledge created in developed countries with their relatively high endowments of human capital can be transferred to developing countries through FDI. Knowledge and technology can further provide spill-over from the foreign firms to the domestic firms through links between foreign firms and local suppliers of components. Through learning-by-doing, local firms can eventually compete with foreign-owned firms simply by imitation.

In turn, ever-increasing competition from local firms may compel foreign firms to bring in superior quality technology and know-how, or to accelerate innovation activity. In sum, R&D investment and imitation may enhance the marginal productivity of the capital stocks in both the host countries and the developing country. New growth theory provides powerful support for the thesis that FDI could be a potent factor in promoting growth.

Using Grossman and Helpman (1992) and allowing the presence of FDI, we are able to construct a model in Chapter 3 which detects the interrelationships between FDI, innovation, imitation and the long-run growth rate, and re-examines the effects of technology policy. The model provides the simulation for solving the conditions for the rate of imitation, the rate of FDI and the rate of long-run growth. In respect of policy implication, the model also examines the effects of governmental interventions in the cost of conducting innovation or imitation, the population, and the additional cost of production that FDI firms have to pay. One of the major findings is that governmental policies to promote local technology activities do not necessarily improve the relative condition of labour in the policy-active country.

1.3 Empirical Test of the Effects of FDI on Growth due to Technology Spill-over

Inspired by Barro and Sala-i-Martin (1995, Ch.4), the empirical test in Chapter 4 provides support for the argument that FDI may be one of the engines for technology development, which cultivates the increase of growth rate for developing countries, using Taiwan as an example. FDI can provide not only sources of additional capital that alleviate the capital shortages of developing countries but also the advanced technology that is often far beyond the innovative ability of developing countries.

Taiwan is a good example to test the argument because it has been regarded as one of the fastest-developing countries in Asia. She has established relatively advanced hi-tech industries such as computer manufacture, compared with other newly developing countries like South Korea and Singapore, or regions like Hong Kong.

With ordinary least squares (OLS) technique, a time series econometric study is conducted in Chapter 4 in which we test the effects of FDI on GDP for all industry levels and for manufacturing industry in Taiwan. The independent variables we have chosen include cumulative fixed capital formation, labour force, and cumulative FDI. The hypothesis to be tested is that the cumulative knowledge, which is the result from cumulative FDI, helps to stimulate the growth rate of GDP in Taiwan.

The positive results of the exercise show that FDI does play an important role in manufacturing industry. Since manufacturing industry usually plays a very important role for a developing country at the early economic developing stage, the result does suggest that FDI can be an engine for economic growth. Through learning-by-doing and knowledge spill-over, developing countries can improve their productivity by attracting more FDI, which brings advanced technology into the developing country and fosters their economic growth.

Chapter 2

Trade Policy and Technology: When is a VER superior to a tariff? - An Analysis of Trade Policy and Economic Welfare

Is there some action a government of India could take that would lead the Indian economy to grow like Indonesia's or Egypt's? If so, what, exactly? If not, what is it about the "nature of India" that makes it so? The consequences for human welfare involved in questions like these are simply staggering: Once one starts to think about them, it is hard to think about anything else. (Lucas [1988])

2.1 Introduction

Technological progress may take place in two dimensions: the horizontal differentiation in product variety and the vertical improvement in product quality. In the last fifteen years, for economists, the most significant contribution in growth theory was that we began to be able to understand and model technological progress. Probably the most significant contributions to endogenous growth theory were pioneered

by P. Romer (1987, 1990), Aghion and Howitt (1992), and Barro and Sala-i-Martin (1995, Ch.6, Ch.7) which involve positive R&D activity that results in technological progress due to the ex-post monopoly power or the ownership of patents.

In Romer's (1987, 1990) and Barro and Sala-i-Martin's (1995, Ch.6) model, technological progress takes the form of expansion in the variety of intermediate goods which are the inputs of final production and provides the engine of economic growth. By contrast, in the models of Aghion and Howitt (1992), and Barro and Sala-i-Martin (1995, Ch.7) technological progress takes the form of quality improvement in the inputs (intermediate goods) of final production, and the level of quality in the production technology is determined by the monopoly profit from successful R&D engaged in by the individual firm. Long run growth rate in final production hence turns out to have a positive relationship to the level of quality in the production technology.

These models have some useful implications for North (developed) and South (developing) economies' interaction in terms of the diffusion of technology and trade policies. For example, developing countries can take advantage of foreign direct investment (FDI) to learn new technologies from developed countries which have been engaging in new technology innovation or quality improvement, or they can open trade lanes to import new technologies from developed countries. However, the latter often implement the protective form of trade policies such as tariffs or quotas.

Lucas (1988) has pointed out that one of the stylised facts of the process of economic growth from international trade is that, economies growing the fastest have increased exports of new goods not exported by them before. Hence understanding the effect of trade policies on the level of national income would help one understand the process of economic growth of developing countries. It is important that we fully understand the detrimental effects upon economic growth/welfare of either Tariffs or Quotas or both. To this end, a specialised area of economic theory has been developed.

A typical trade policy, a voluntary export restraint (VER), is one form of quota, which is an undertaking by exporting firms to restrict the quantity of their exports to a particular market, and is equivalent to an import quota where the quota rent accrues to foreign exporters. Under perfect competition, tariffs or quotas raise the price of imported goods and reduce import volume. A VER differs from a tariff in that what would have been government revenue with a tariff may accrue as rents to foreign exporters.

For the importing country, a VER is generally agreed to be inferior to an import tariff on welfare grounds since it is equivalent to the case that the importing country imposes an import tariff and gives the tariff revenue to the foreign exporters. It is also well known that a tariff and a quota are equivalent under perfect competition if quota rent accrues to domestic residents, ignoring distribution questions. But the quota is inferior if the quota rent is paid to foreign residents.

There is an enormous literature on trade policies under perfect competition such as Corden (1974), Dixit and Norman (1980), Woodland (1982), Krugman and Obstfeld (1997), and Helpman and Krugman (1989). An extensive survey of the literature on tariff vs. quotas together with a forceful argument against quota can be seen in the work of Anderson (1988).

The general argument is that, a perfectly competitive market with an import quota causes efficiency losses similar to a tariff, but it amplifies the losses by losing the domestic government's revenue. The net cost of a quota is equivalent to the net cost of a tariff if the domestic government holds an auction of import licences or assigns import rights to home residents. It is inferior to a tariff if the domestic government assigns the licences to foreigners.

In the scenario of domestic monopoly, Bhagwati (1965) showed that, even if the quota rent accrues to domestic residents, quotas and tariffs are not equivalent. This is because the quota allows the domestic monopoly to exploit its market power by restricting output. Krishna (1989) has extended this argument to oligopoly and also shown that a VER set at the free trade level of imports, is a facilitating practice that allows domestic and foreign firms to increase their equilibrium prices. Hence, even under imperfect competition, just as under perfect competition, traditional orthodoxy on trade policy often claims that a quota is inferior to a tariff because of its anti-competitive effect as well as the loss of the quota rent to foreign exporters.

However, Rotemberg and Saloner (1989) showed that a quota may have a pro-competitive effect rather than an anti-competitive effect, and therefore be superior to an equivalent tariff. More recently, P. Romer (1994) has analysed the welfare effects of tariffs in a model where a country imports differentiated products supplied by a monopolistically competitive foreign industry as the inputs of final production. In his model, technological progress takes the form of expansion in the variety of intermediate goods as in P. Romer (1987, 1990). Under this scenario, a tariff increases the price of imports as in conventional analysis, but also reduces product variety. The tariff reduces the profitability of exporting to the domestic market, resulting in some foreign firms stopping their supply to the domestic market. This reduces product variety. He shows that the welfare losses from a tariff may be much larger than suggested by conventional analysis because of the discouraging effect of a tariff on product variety.

Motivated by the Romer (1994) model, this chapter extends his model by comparing the welfare effects of a tariff with the welfare effects of a VER that results in the same volume of imports as the tariff. It is demonstrated that under certain circumstances, with the form of technology innovation and improvement as above, a VER has less effect than a tariff on the profitability of exporting to the domestic market and hence has less effect on product variety and quality improvement. In other words, a VER can incur less welfare loss than the tariff to the developing countries and hence the quota may be superior to the tariff.

The rest of this chapter is organised as follows. Section 2.2 is the analysis of welfare effects of a tariff and a VER in the model of expanding product *variety*, following the model of Romer (1987, 1990). This section also provides some examples and a general approach. In Section 2.3, we extend the effects of a tariff and a VER from variety to a *quality improving* model, which follows Barro and Sala-i-Martin (1995), and in that, we study both monopoly pricing and limit pricing competition. We also give some illustrative examples. Conclusions are summarised in Section 2.4.

2.2 The Model of Product Variety Expansion^{2.1}

2.2.1 The Basic Model

In a developing country, a final consumption good is produced by a perfectly competitive domestic industry using labour and imported inputs that are produced by a monopolistically competitive foreign (developed) industry. Assume that the foreign countries retain perpetual monopoly rights over the use of their goods as intermediate inputs for production in the domestic country. In the model, these intellectual property rights make it infeasible for researchers in the domestic country to devote resources to imitation. We also assume for now that entrepreneurs in the domestic country do not find it worthwhile to innovate.

Production Function

The production function for firms in a developing country is assumed to take the form as in section seven of Romer (1994) which follows Spence (1976), Dixit and Stiglitz (1977), Ethier (1982), and Romer (1987, 1990) and is written as:

$$Y = L^{1-\alpha} \sum_{i=1}^N x_i^\alpha \quad (2.1)$$

^{2.1} This model was initially developed as part of a submission for the degree of MSc (Su, 1994) and published in Collie and Su (1998). The version here is an extended and further developed version of this initial model

where Y is the output of final consumption good, L is the domestic labour supply, x_i is the quantity of the i th imported input, and N is the number of inputs imported. As aforesaid, a large number of inputs are available in the foreign (developed) country and can be supplied to the domestic (developing) country.

The more firms enter the domestic market, the lesser the profit firms can get. To represent this idea formally, assume that a foreign firm can export inputs after incurring the fixed cost to enter the domestic market, which is linearly increasing in the number of imported inputs, $c_0 = \mu N$.

One justification of this assumption is that when firms are introducing new goods to the domestic market, they have to set up a training service and parts supply network necessary before these new goods can be used in this economy. The more varieties of inputs are being introduced into the economy, however, the higher the marginal productivity of labour will be. Hence the wage rate will be increasing in the number of firms.

Each input is supplied by a single monopolistically competitive firm with constant marginal cost, c_1 . Firms will incur the fixed cost and supply an input if the monopoly profits exceed the fixed cost, hence for the marginal good N the monopoly profits are just equal to the fixed cost.

Since all imported inputs enter the production function symmetrically and all foreign firms have identical marginal cost, all firms will sell the

same quantity and receive the same revenue. The inverse derived demand function for input i is given by its marginal productivity schedule:

$$p_i(x_i) = \alpha L^{1-\alpha} x_i^{\alpha-1} \quad (2.2)$$

Assuming initially that the domestic government imposes an ad valorem tariff τ on the imported inputs, the profits of the i th foreign firm are:

$$\pi_i = (1 - \tau)p_i(x_i)x_i - c_1x_i \quad (2.3)$$

Since demand for the input has constant elasticity, $\eta=1/(1-\alpha)$, the profit maximising price of an input is $p^*(\tau) = c_1/\alpha(1 - \tau)$ and the monopoly profits of a foreign firm are $\pi^* = (1 - \alpha)c_1x^*/\alpha$. The quantity of an input imported is obtained by substituting p^* into the derived demand (Eq.(2.2)) which yields:

$$x^*(\tau) = \alpha^{2(1-\alpha)} c_1^{-1(1-\alpha)} (1 - \tau)^{1(1-\alpha)} L \quad (2.4)$$

The Number of Inputs

The number of imported inputs is obtained by substituting p^* and x^* into π^* and equating with the fixed cost of supplying the marginal input N to the domestic market, $\pi^*(\tau) = \mu N$, which yields:

$$N(\tau) = (1/\mu)(1 - \tau)^{1/(1-\alpha)}(1 - \alpha)\alpha^{(1+\alpha)/(1-\alpha)}c_1^{-\alpha/(1-\alpha)}L \quad (2.5)$$

National Income and Welfare Loss

Since all the inputs are imported, national income is equal to labour's share of final output plus the tariff revenue collected by the government. Total payments for imported inputs are a proportion α of final output, and the government receives a proportion τ of these payments as tariff revenue, hence national income can be written as:

$$Y_{Nat\tau}(\tau) = (1 - \alpha + \tau\alpha)Y(\tau) = (1 - \alpha + \tau\alpha)L^{1-\alpha}N(\tau)(x^*(\tau))^\alpha \quad (2.6)$$

Now consider the effect of a fully anticipated tariff on national income. A fully anticipated tariff will affect both the quantity of inputs imported and

the number of inputs imported. The proportional loss of national income is:

$$\begin{aligned}
 1 - \frac{Y_{Nat}(\tau)}{Y_{Nat}(0)} &= 1 - \frac{1 - \alpha + \tau\alpha}{1 - \alpha} \frac{N(\tau)}{N(0)} \left(\frac{x^*(\tau)}{x^*(0)} \right)^\alpha \\
 &= 1 - \frac{(1 - \alpha + \tau\alpha)(1 - \tau)^{(1+\alpha)(1-\alpha)}}{1 - \alpha} \quad (2.7)
 \end{aligned}$$

Instead of using a tariff to restrict the quantity of imports the domestic government could negotiate a VER with the foreign country. The VER can be modelled as equivalent to an implicit tariff which affects output and price but is not actually paid by the foreign firm, or equivalently the tariff revenue accrues to the foreign firm. With an implicit ad valorem tariff, θ , the price and quantity of an imported input set by the foreign will be as determined above. The price of an imported input is $p^*(\theta) = c_1/\alpha(1 - \theta)$ and the quantity of an input imported is:

$$x^*(\theta) = \alpha^{2(1-\alpha)} c_1^{-1(1-\alpha)} (1 - \theta)^{1(1-\alpha)} L \quad (2.8)$$

However, the profits of the foreign firm are not the same as above since the foreign firm does not actually pay the implicit tariff; hence its profits are:

$$\pi^*(\theta) = (p^*(\theta) - c_1)x^*(\theta).$$

To find the number of imported inputs, substitute p^* and x^* into π^* , and equate this with the fixed cost of supplying the marginal input N , $\pi^*(\theta) = \mu N$, hence:

$$N(\theta) = (1/\mu)(1 - \alpha + \alpha\theta)(1 - \theta)^{-\alpha(1-\alpha)} \alpha^{(1+\alpha)(1-\alpha)} c_1^{-\alpha(1-\alpha)} L \quad (2.9)$$

Since the domestic country receives no tariff revenue, national income with a VER is just labour's share of final output:

$$Y_{Nat\tau}(\theta) = (1 - \alpha)Y(\theta) = (1 - \alpha)L^{1-\alpha}N(\theta)(x^*(\theta))^\alpha \quad (2.10)$$

Now consider the welfare loss from a fully anticipated VER. The proportional loss of national income is:

$$\begin{aligned}
1 - \frac{Y_{Nat}(\theta)}{Y_{Nat}(0)} &= 1 - \frac{1 - \alpha}{1 - \alpha} \frac{N(\theta)}{N(0)} \left(\frac{x^*(\theta)}{x^*(0)} \right)^\alpha \\
&= 1 - \frac{(1 - \alpha + \alpha\theta)(1 - \theta)^{2\alpha/(1-\alpha)}}{1 - \alpha}
\end{aligned} \tag{2.11}$$

2.2.2 Calibrations

To find the implicit tariff equivalent of the VER, θ , we investigate two cases: i) the implicit tariff equivalent of the VER, θ , which results in the same quantity of *each* input as the tariff τ , and ii) the implicit tariff equivalent of the VER, θ , which results in the same quantity of *total* imports as the tariff τ .

i) To calibrate the first case, let $\alpha = 1/2$ as assumed by Romer (1994). The welfare loss of national income from a fully anticipated tariff is given by substituting $\alpha = 1/2$ into Eq.(2.7), which is equal to $1 - (1 + \tau)(1 - \tau)^3$. When a fully anticipated tariff takes the value of a range from 0.1 to 0.95, the welfare loss is shown in the second column in Table 2.1.

For a given tariff, τ , the implicit tariff equivalent of the VER, θ , that results in the same volume of *each* type of import can be obtained by substituting same value of τ for θ . Hence the welfare loss from a VER, that results in the same quantity of *each* input as the tariff τ , is equal to $1 - (1 + \tau)(1 - \tau)^2$. We calibrate this value according to the value of τ in the range between 0.1 and 0.95 as shown in the third column of Table 2.1.

Table 2.1: Welfare loss from tariff and the VER that results in the same quantity of *each* input as the tariff when $\alpha=1/2$.

Tariff rate	Welfare loss from tariff as a percentage of national income	Welfare loss from VER as a percentage of national income
τ	$1 - (1 + \tau)(1 - \tau)^3$	$1 - (1 + \tau)(1 - \tau)^2$
0.1	0.1981	0.109
0.15	0.293756	0.169125
0.2	0.3856	0.232
0.25	0.472656	0.296875
0.3	0.5541	0.363
0.35	0.629256	0.429625
0.4	0.6976	0.496
0.45	0.758756	0.561375
0.5	0.8125	0.625
0.55	0.858756	0.686125
0.6	0.8976	0.744
0.65	0.929256	0.797875
0.7	0.9541	0.847
0.75	0.972656	0.890625
0.8	0.9856	0.928
0.85	0.993756	0.958375
0.9	0.9981	0.981
0.95	0.999756	0.995125

From Table 2.1, when $\alpha = 1/2$ the welfare loss from a tariff always exceeds the welfare loss from a VER that results in the same volume of each imported input. Therefore in the first case, when $\alpha = 1/2$, a VER is unambiguously superior to a tariff, independently of the value of τ .

ii) To find the implicit tariff equivalent of the VER, θ , which results in the same quantity of *total* imports as the tariff τ , set $N(\theta)x^*(\theta) = N(\tau)x^*(\tau)$ which implies:

$$(1 - \alpha + \alpha\theta)(1 - \theta)^{(1+\alpha)(1-\alpha)} = (1 - \alpha)(1 - \tau)^{2 \cdot (1-\alpha)} \quad (2.12)$$

For a given tariff, τ , the implicit tariff equivalent of the VER, θ , that results in the same volume of *total* imports can be obtained by numerically solving Eq.(2.12).

When $\alpha = 1/2$, Eq.(2.12) becomes: $(1 - \theta)^3(1 + \theta) = (1 - \tau)^4$. By numerically solving this equation, the values of θ corresponding to different values of τ are illustrated in the second column of Table 2.2. Hence, by substituting these values and $\alpha = 1/2$ into Eq.(2.11), it is possible to compare the welfare losses from a tariff with the welfare losses from a VER that results in the same volume of imports.

As shown in the third column of Table 2.2, the welfare loss from a VER exceeds the welfare loss from a tariff when τ is equal to or smaller than 0.5. Hence conventional wisdom is restored. However, if τ is greater than or equal to 0.55, the welfare loss from a VER is smaller than the welfare loss from a tariff. Hence when $\alpha = 1/2$ in the case that the implicit tariff equivalent of the VER, θ , results in the same quantity of *total* imports as the tariff τ , the results are ambiguous.

Table 2.2: Welfare loss from the VER that results in the same quantity of *total* imports as the tariff when $\alpha=1/2$.

Tariff rate	Implicit tariff equivalent of VER	Welfare loss from VER as a percentage of national income
τ	θ	$1 - (1 + \theta)(1 - \theta)^2$
0.1	0.177005	0.20279
0.15	0.25317	0.301038
0.2	0.323605	0.394437
0.25	0.389319	0.48188
0.3	0.450996	0.562662
0.35	0.509119	0.636356
0.4	0.564034	0.70273
0.45	0.615995	0.761706
0.5	0.665185	0.813331
0.55	0.711727	0.857753
0.6	0.755697	0.895213
0.65	0.797126	0.926034
0.7	0.835992	0.950614
0.75	0.872223	0.969432
0.8	0.905665	0.983041
0.85	0.936074	0.992088
0.9	0.962929	0.997302
0.95	0.985606	0.999589

To calibrate this model so that the required counterintuitive result is obtained, let $\alpha = 1/3$, rather than $\alpha = 1/2$. Substituting $\alpha = 1/3$ into Eq.(2.7), the proportional loss of national income from a tariff is given as:

$$\begin{aligned}
 1 - \frac{Y_{Nat}(\tau)}{Y_{Nat}(0)} &= 1 - \frac{(1 - \alpha + \tau\alpha)(1 - \tau)^{(1+\alpha)(1-\alpha)}}{1 - \alpha} \\
 &= 1 - \frac{1}{2}(2 + \tau)(1 - \tau)^2
 \end{aligned}
 \tag{2.13}$$

The proportional loss of national income from a fully anticipated VER is given by substituting $\alpha = 1/3$ into Eq.(2.11) which yields:

$$1 - \frac{Y_{Nat}(\theta)}{Y_{Nat}(0)} = 1 - \frac{(1 - \alpha + \alpha\theta)(1 - \theta)^{2\alpha(1-\alpha)}}{1 - \alpha}$$

$$= 1 - \frac{1}{2}(2 + \theta)(1 - \theta) \quad (2.14)$$

The relationship between a tariff τ and the implicit tariff equivalent of the VER, θ , that results in the same volume of imports is given by substituting $\alpha = 1/3$ into Eq.(2.12) which yield:

$$(1 - \alpha + \alpha\theta)(1 - \theta)^{(1+\alpha)(1-\alpha)} = (1 - \alpha)(1 - \tau)^{2/(1-\alpha)}$$

$$\Rightarrow (1 - \theta)^2(2 + \theta) = 2(1 - \tau)^3 \quad (2.15)$$

Again, for a given tariff, τ , the implicit tariff equivalent of the VER, θ , that results in the same volume of *total* imports can be obtain by numerically solving Eq.(2.15) and is illustrated in the second column of Table 2.3. The comparison of the welfare losses from a tariff with the welfare losses from a VER that results in the same volume of imports when $\alpha = 1/3$ are shown in the third and forth columns of Table 2.3.

Table 2.3: Welfare loss from tariff and the VER that results in the same volume of *total* imports as the tariff when $\alpha=1/3$.

Tariff rate	Implicit tariff equivalent of VER	Welfare loss from tariff as a percentage of national income	Welfare loss from VER as a percentage of national income
τ	θ	$1 - (1/2)(1 - \tau)^2(2 + \tau)$	$1 - (1/2)(1 - \theta)(2 + \theta)$
0.1	0.182699	0.1495	0.108039
0.15	0.263337	0.223313	0.166342
0.2	0.338231	0.296	0.226316
0.25	0.408067	0.367188	0.287293
0.3	0.473354	0.4365	0.348709
0.35	0.534477	0.503563	0.410072
0.4	0.59173	0.568	0.470938
0.45	0.645335	0.629438	0.530896
0.5	0.695453	0.6875	0.589554
0.55	0.742199	0.741813	0.646529
0.6	0.785641	0.792	0.701436
0.65	0.825801	0.837688	0.753874
0.7	0.862655	0.8785	0.803415
0.75	0.896124	0.914063	0.849581
0.8	0.926053	0.944	0.891814
0.85	0.952183	0.967938	0.929418
0.9	0.974068	0.9855	0.961438
0.95	0.990857	0.996313	0.986328

As shown in Table 2.3, when $\alpha = 1/3$ the welfare loss from a tariff always exceeds the welfare loss from a VER that results in the same volume of imports, and hence a VER is superior to a tariff. This counter-intuitive result occurs when $\alpha = 1/3$ but conventional wisdom is restored when $\alpha = 1/2$, so the value of α is the critical factor.

2.2.3 General Approach

The aforesaid examples are given by numerical setting of the parameter α . However, to get a general proof, we need to compare the welfare effects of a tariff with the welfare effects of a VER in general forms.

The welfare loss from a tariff is given by Eq.(2.7) and the welfare loss from a VER is given by Eq.(2.11).

i) In the first case, the implicit tariff equivalent of the VER, θ , results in the same quantity of each input as the tariff τ . Substituting the same value of τ for θ , the difference between these two values is:

$$\begin{aligned} 1 - \frac{Y_{Nat}(\tau)}{Y_{Nat}(0)} - \left(1 - \frac{Y_{Nat}(\theta)}{Y_{Nat}(0)}\right) &= 1 - \frac{(1 - \alpha + \tau\alpha)(1 - \tau)^{(1+\alpha)(1-\alpha)}}{1 - \alpha} \\ &\quad - \left(1 - \frac{(1 - \alpha + \alpha\tau)(1 - \tau)^{2\alpha(1-\alpha)}}{1 - \alpha}\right) \\ &= \frac{(1 - \alpha + \alpha\tau)\tau(1 - \tau)^{2\alpha(1-\alpha)}}{1 - \alpha} > 0, \end{aligned}$$

where $0 < \alpha < 1$, $0 < \tau < 1$.

Hence the welfare loss from a tariff always exceeds the welfare loss from a VER that results in the same volume of each imports. The proof justifies the superiority of a VER to a tariff.

A VER has less effect on profits than a tariff, and hence has less effect on product variety than a tariff. More varieties are introduced into the developing economy, and hence the output of final consumption good is increased. A tariff allows the developing country to gain a tariff revenue but reduces the output of final consumption good.

From the aforesaid proof, we see that when the implicit tariff equivalent of the VER, θ , results in the same quantity of each input as the tariff τ , the gain from more varieties of imports always exceeds the loss of lacking a tariff revenue.

ii) In the second case, the implicit tariff equivalent of the VER, θ , results in the same quantity of total imports as the tariff τ . The implicit tariff is given by Eq.(2.12).

$$(1 - \alpha + \alpha\theta)(1 - \theta)^{(1+\alpha)(1-\alpha)} = (1 - \alpha)(1 - \tau)^{2(1-\alpha)}$$

The welfare loss from a tariff is given by Eq.(2.7) and the welfare loss from a VER is given by Eq.(2.11). To compare the difference between these two equations, we rewrite τ as a function of θ and α ^{2.2}.

^{2.2} Intuitively we may want to rewrite θ as a function of α and τ and substitute the expression for θ in Eq.(2.11). However, in this case, τ is easier to be transformed than θ .

$$\tau = 1 - [(1 - \alpha + \alpha\theta)/(1 - \alpha)]^{(1-\alpha)^{-2}} (1 - \theta)^{(1+\alpha)^{-2}} \quad (2.16)$$

Eq.(2.16) gives us the values of τ for different values of α , θ .

If Eq.(2.11) - Eq.(2.7) ≤ 0 , the welfare loss of a VER is less than or equal to the welfare loss of a tariff. Therefore the condition that a VER is superior to a tariff is given as:

$$(1 - \alpha + \alpha\tau)(1 - \tau)^{(1+\alpha)^{-1}(1-\alpha)} \leq (1 - \alpha + \alpha\theta)(1 - \theta)^{2\alpha/(1-\alpha)} \quad (2.17)$$

Substituting (2.12) into (2.17), the condition becomes:

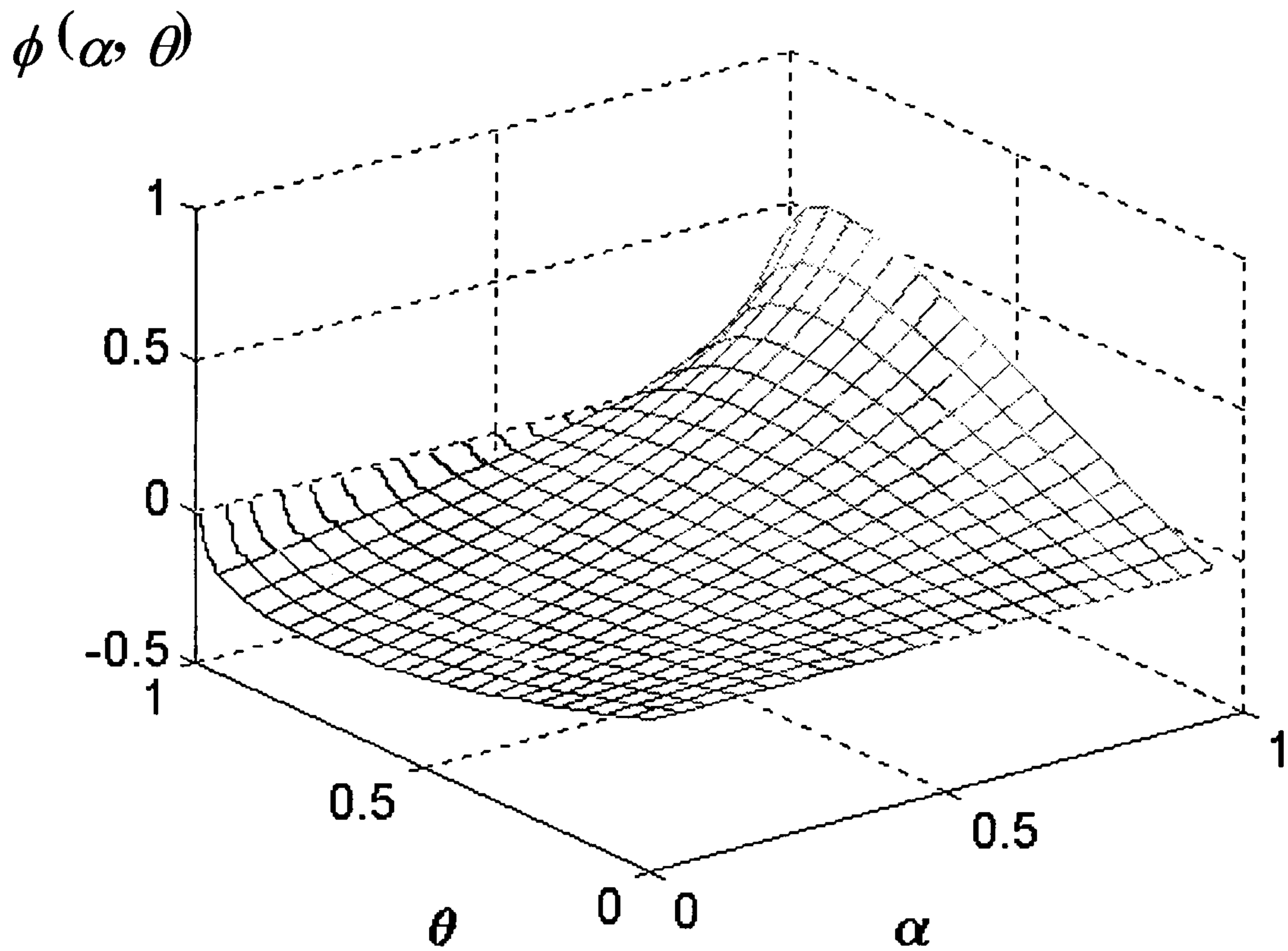
$$\tau \leq \theta(1 - \alpha)/(1 - \alpha\theta) \quad (2.18)$$

Hence, Eq.(2.16) has to satisfy this condition if VERs are superior to tariffs. That is,

$$\begin{aligned} \phi(\alpha, \theta) &= 1 - [(1 - \alpha + \alpha\theta)/(1 - \alpha)]^{(1-\alpha)^{-2}} (1 - \theta)^{(1+\alpha)^{-2}} - \theta(1 - \alpha)/(1 - \alpha\theta) \\ &\leq 0 \end{aligned} \quad (2.19)$$

Two variables, i.e., α and θ , affect the values of the function. The values of the function, as a result of interaction between α and θ , can be seen in a 3-D diagram. We plot the functional value into a 3-D diagram with the values of α and θ range from zero to 1^{2.3}. The 3-D diagram is shown in Figure 2.1.

Figure 2.1: Values of $\phi(\alpha, \theta)$, α , and θ that results in the same quantity of total imports as the tariff τ



In general, higher values of α tend to drive the functional value up, for a given value of θ . Since a lower value of α also means a lower elasticity

^{2.3} The values of the function $\phi(\alpha, \theta)$, α , θ , and the equivalent tariff, τ , are listed in Appendix I.

of demand, which equals to $\eta = 1/(1 - \alpha)$, it means that when elasticity of demand is lower, the VER tends to be superior to the tariff because the welfare gain that results from the greater product variety with VER is sufficiently large to compensate for the loss of tariff revenue. However, the effect of θ (or τ) is ambiguous. From Figure 2.1, we see that, when α is sufficiently low, (for example, $\alpha = 1/4$), fixing the value of α , higher values of θ tend to lower the functional value at the beginning, but drive it up later. In a 2-D plane, this would be presented as an U-shape curve with increasing values of θ and a constant value of α . However, when α is sufficiently high, (for example, $\alpha = 0.49$ as in Figure 2.2) the effect is different. In this case, fixing the value of α , higher values of θ tend to drive up the functional value at the beginning, but lower it later, and eventually drive it up again. In a 2-D plane, this would be presented as a "~" shape curve with increasing values of θ and a constant value of α .

Figure 2.2: Values of $\phi(\alpha, \theta)$, α , and θ that results in the same quantity of total imports as the tariff τ in a 2-D plane

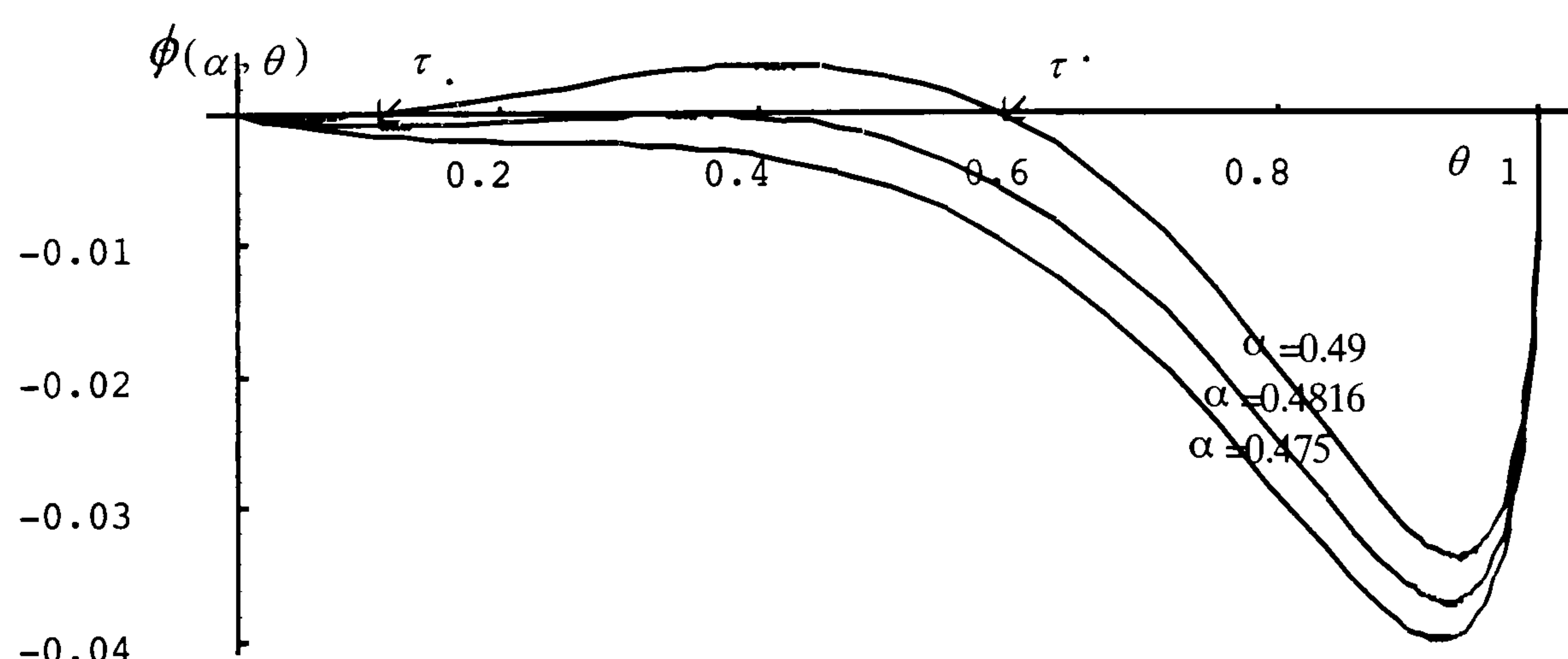
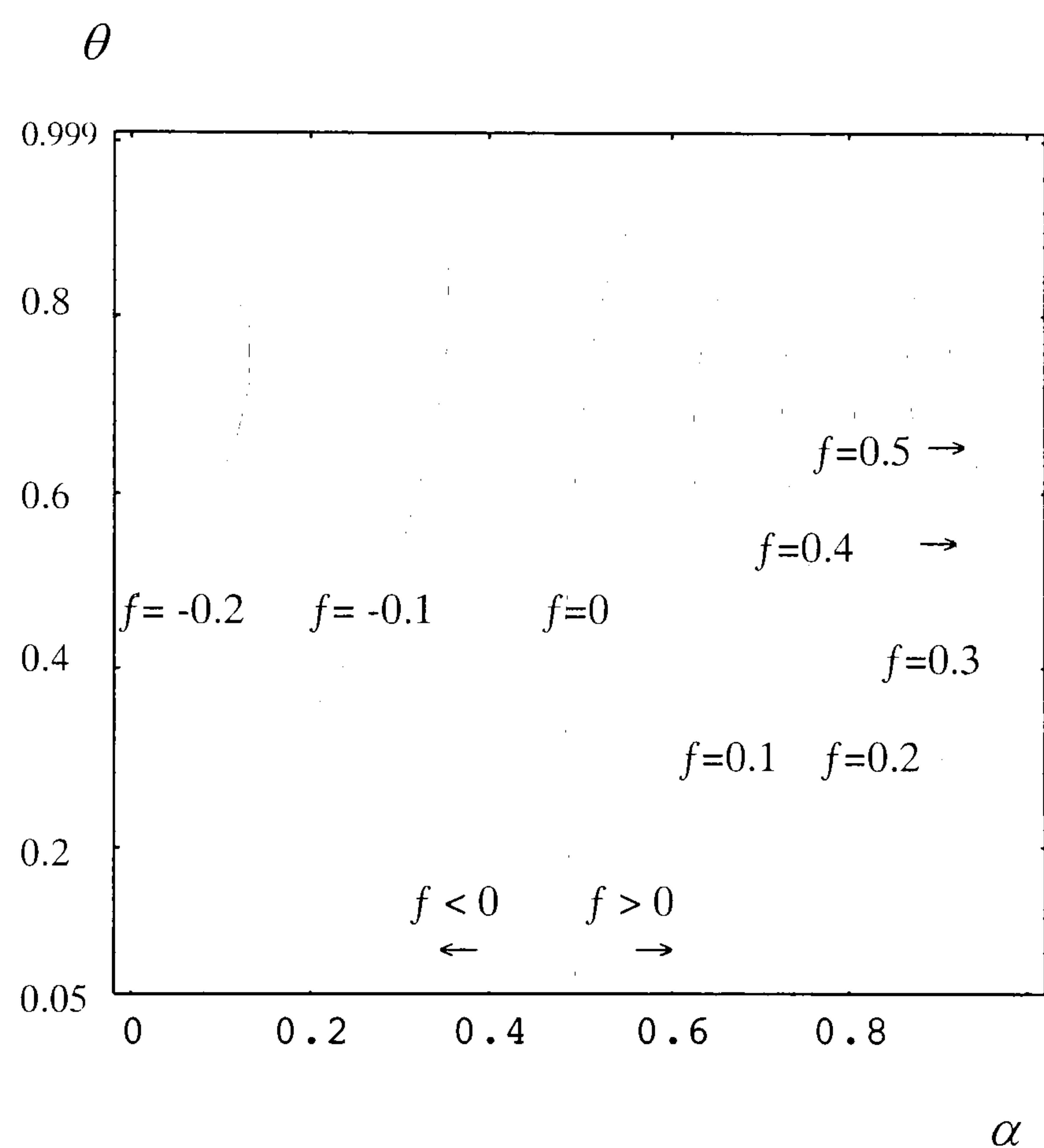


Figure 2.1 looks like a mountain with its peak formed when both α and θ are close to 1. In general, the functional values are negative when α is smaller and θ is bigger. To be more specific, Figure 2.3 shows the result of "slicing" this 3D model at different functional values.

Figure 2.3: Contour values of the function $\phi(\alpha, \theta)$, α , and θ that results in the same quantity of total imports as the tariff τ



In Figure 2.3, we see that the curve $f = 0$ cuts the figure into two areas. On the left-hand side of the curve, the functional values are always negative, and on the right are positive. Therefore any point in the area

on the left-hand side of the curve $f = 0$ satisfies condition (2.19), and in these cases, a VER is superior to a tariff.



2.3 The Model of Product Quality Improvement

2.3.1 The Basic Model

The second model follows chapter seven of Barro and Sala-i-Martin (1995, Ch.7), in which we allow for improvements in quality or productivity of each type of inputs, produced and improved by a monopolistically competitive foreign industry in developed countries. A perfectly competitive domestic industry uses labour and imported inputs to produce a final consumption good. The production function for the consumption good is:

$$Y = L^{1-\alpha} \sum_{i=1}^N (\tilde{x}_i)^\alpha \quad (2.20)$$

where Y is the output of final consumption good, L is the domestic labour supply, N is the number of inputs imported, while the new element \tilde{x}_i denotes the quality-adjusted amount of the i th imported input.

Let the quality improvement take the same form as the set-up in Aghion and Howitt (1992) and Grossman and Helpman (1991, Ch.4) (a “creative destruction” process). That is, the grades of each input are arrayed along a quality ladder with the levels q , q^2 , and so on. If κ_i is the highest quality occurred in the i th input, and the available grades in

the i th input are $1, q, q^2, \dots, q^{\kappa_i}$, then the quality-adjusted amount of the i th imported input is given by:

$$\tilde{x}_i = \sum_{k=0}^{\kappa_i} (q^k \cdot x_{ik}) \quad (2.21)$$

The firm that successfully improves and gains a higher quality product in sector i retains a monopoly right to produce the i th intermediate good at that quality level. Assume that the cost of production is the same for all qualities q^k , where $k = 0, \dots, \kappa_i$. The latest innovation has an efficiency advantage over the prior innovations in the sector.

The different quality grades are perfect substitutes but are weighted by their respective grades. The leading-edge good is equivalent to $q > 1$ units of the next best good. Assume that each input is supplied by a single monopolistically competitive firm with constant marginal cost, c_1 . Thus, if the best quality good is priced at $p_{i\kappa_i}$, then the next best good could only be sold at the best price of $(1/q) \cdot p_{i\kappa_i}$, the one below that at the price $(1/q^2) \cdot p_{i\kappa_i}$, and so on. If $(1/q) \cdot p_{i\kappa_i}$ is less than the marginal cost of production, c_1 , then all of the lower quality grades than q^{κ_i} can not survive.

From the previous section, it is straightforward to see that the leading-edge producer's monopoly price is (c_1/α) , therefore, if $(c_1/\alpha)(1/q)$ is less than c_1 , the next (and all lower quality producers) cannot compete against the leader's monopoly price. Thus the condition $\alpha q > 1$ implies that monopoly pricing will prevail. This inequality will hold if q is large enough. That is, it holds if the quality improvement is large enough (e.g. dramatic improvement).

If $\alpha q \leq 1$, we assume that the firms producing intermediate goods of a given type engage in Bertrand price competition, thus the quality leader employs a limit-pricing strategy. We consider these cases in turn.

2.3.1.1 $\alpha q > 1$ (Monopoly Pricing)

The cost of production is the same for all qualities q^k , where $k = 0, \dots, \kappa_i$, and only the best existing quality of input i — with quality level q^{κ_i} —is available currently for production in equilibrium. Other qualities lower than q^{κ_i} in the i th input turn out to be obsolete (due to perfect substitution).

A large number of inputs are available in the foreign country and can be supplied to the domestic country after a foreign firm has incurred the fixed cost to enter the domestic market, which is linearly increasing in the number of imported inputs, $c_0 = \mu i$. Each input is supplied by a single monopolistically competitive firm with constant marginal cost, c_1 .

Firms will incur the fixed cost and supply an input if the monopoly profits are just equal to the fixed cost.

The inverse derived demand function for the leading-edge good (with quality level q^{κ_i}) of the i th input is given by its marginal productivity schedule:

$$p_{i\kappa_i}(x_{i\kappa_i}) = \alpha L^{1-\alpha} (q^{\kappa_i})^\alpha \cdot (x_{i\kappa_i})^{\alpha-1} \quad (2.22)$$

Assuming initially that the domestic government imposes an ad valorem tariff τ on the imported inputs, the profits of the i th foreign firm are:

$$\pi_{i\kappa_i} = (1 - \tau)p_{i\kappa_i}(x_{i\kappa_i})x_{i\kappa_i} - c_1x_{i\kappa_i} \quad (2.23)$$

Since demand for the i th input has constant elasticity, $\eta = 1/(1 - \alpha)$, the profit maximising price of an input is $p_{i\kappa_i}^*(\tau) = c_1/\alpha(1 - \tau)$ and the monopoly profits of a foreign firm are $\pi_{i\kappa_i}^* = (1 - \alpha)c_1x_{i\kappa_i}^*/\alpha$. The quantity of an input imported is obtained by substituting $p_{i\kappa_i}^*$ into the derived demand, which yields:

$$x_{\kappa_i}^*(\tau) = \alpha^{2 \cdot (1-\alpha)} c_1^{-1 \cdot (1-\alpha)} (1-\tau)^{1 \cdot (1-\alpha)} L(q^{\kappa_i})^{\alpha \cdot (1-\alpha)} \quad (2.24)$$

The monopoly profits of a foreign firm are given by substituting $p_{i\kappa_i}^*$ and $x_{\kappa_i}^*$ into Eq.(2.23), which yields:

$$\pi_{i\kappa_i}^*(\tau) = (1-\alpha)\alpha^{(1+\alpha) \cdot (1-\alpha)} c_1^{-\alpha \cdot (1-\alpha)} (1-\tau)^{1 \cdot (1-\alpha)} L(q^{\kappa_i})^{\alpha \cdot (1-\alpha)} \quad (2.25)$$

The number of inputs

The number of imported inputs can be obtained by substituting $p_{i\kappa_i}^*$ and $x_{i\kappa_i}^*$ into $\pi_{i\kappa_i}^*$ and equating with the fixed cost of supplying the marginal input N to the domestic market, $\pi_{i\kappa_i}^*(\tau) = \mu N$, which yields:

$$N_{\tau}^*(\tau) = (1/\mu)(1-\tau)^{1 \cdot (1-\alpha)} (1-\alpha)\alpha^{(1+\alpha) \cdot (1-\alpha)} c_1^{-\alpha \cdot (1-\alpha)} L(q_{\tau}^*)^{\alpha \cdot (1-\alpha)} \quad (2.26)$$

where q_{τ}^* is the quality of the marginal input N under the regime of a tariff, N_{τ}^* , and we denote the marginal quality in the industry under a tariff by q_{τ}^* .

On the other hand, assuming that the quality of different sectors in the industry of the developed world is uniformly distributed over $(1, n)$, where $n > 1$, the density function of the quality distribution is:

$$f(q^{K_i}) = 1/(n - 1) \quad (2.27)$$

therefore, the number of firms producing inputs whose quality locates between q_τ^* and n , in the regime of a tariff, is:

$$N_\tau^* = N \int_{q_\tau^*}^n f(q^{K_i}) d(q^{K_j}) = N(n - q_\tau^*)/(n - 1) \quad (2.28)$$

where N is the total number of inputs available.

Eq.(2.26) and Eq.(2.28) imply that the critical value of marginal quality under a tariff, q_τ^* , is given as the solution to following equation:

$$\mu N(n - q_\tau^*)/(n - 1) = (1 - \tau)^{1(1-\alpha)} (1 - \alpha) \alpha^{(1+\alpha)(1-\alpha)} c_1^{-\alpha(1-\alpha)} L(q_\tau^*)^{\alpha(1-\alpha)} \quad (2.29)$$

Dividing both sides of Eq.(2.29) by n and normalising

$\mu N c_1^{\alpha(1-\alpha)} / (n-1)n^{1-\alpha} L = 1$, Eq.(2.29) yields:

$$1 - \tilde{r} = (1 - \tau)^{1(1-\alpha)} (1 - \alpha) \alpha^{(1+\alpha)(1-\alpha)} \tilde{r}^{\alpha(1-\alpha)} \quad (2.30)$$

where $\tilde{r} = q_\tau^* / n$ is the ratio of marginal quality under a tariff to the highest quality in the industry.

Since all the inputs are imported, national income is equal to labour's share of final output plus the tariff revenue collected by the government. Total payments for imported inputs are a proportion α of final output, and the government receives a proportion τ of these payments as tariff revenue, hence national income can be written as:

$$\begin{aligned} Y_{Nat\tau}(\tau) &= (1 - \alpha + \tau\alpha)Y(\tau) \\ &= (1 - \alpha + \tau\alpha)(1 - \tau)^{\alpha(1-\alpha)} \alpha^{2\alpha(1-\alpha)} c_1^{-\alpha(1-\alpha)} L \sum_{i=N_\tau^*}^N (q^{\kappa_i})^{\alpha(1-\alpha)} \\ &= (1 - \alpha + \tau\alpha)(1 - \tau)^{\alpha(1-\alpha)} \alpha^{2\alpha(1-\alpha)} c_1^{-\alpha(1-\alpha)} L \int_{q_\tau^*}^n f(q) \cdot (q)^{\alpha(1-\alpha)} dq \\ &= (1 - \alpha + \tau\alpha)[n^{1(1-\alpha)} - q_\tau^{*1(1-\alpha)}] \phi \end{aligned} \quad (2.31)$$

where $\phi = (1 - \tau)^{\alpha(1-\alpha)} \alpha^{2\alpha(1-\alpha)} c_1^{-\alpha(1-\alpha)} L(1 - \alpha)/(n - 1)$

Instead of using a tariff to restrict the quantity of imports, the domestic government could negotiate a VER with the foreign country. With the same quantity of an imported input as in the case of a tariff, the prices would be the same in both cases.^{2.4}

However, the profits of the foreign firm are not the same as above since the foreign firm does not pay the tariff, hence its profits are:

$$\pi_Q = (1 - \alpha + \tau\alpha)(1 - \tau)^{\alpha(1-\alpha)} \alpha^{(1+\alpha)(1-\alpha)} c_1^{-\alpha(1-\alpha)} L(q^{\kappa_i})^{\alpha(1-\alpha)} \quad (2.32)$$

To find the number of imported inputs, equate the profits with the fixed cost of supplying the marginal input N , $\pi_Q = \mu N$, under the assumption of uniformed distribution. Hence the critical value of marginal quality, q_Q^* , under a VER, is given as the solution to the following equation:

$$\begin{aligned} & \mu N (n - q_Q^*) / (n - 1) \\ &= (1 - \tau)^{\alpha(1-\alpha)} (1 - \alpha + \tau\alpha) \alpha^{(1+\alpha)(1-\alpha)} c_1^{-\alpha(1-\alpha)} L(q_Q^*)^{\alpha(1-\alpha)} \end{aligned} \quad (2.33)$$

^{2.4} Here, we only consider the simple case where the implicit tariff equivalent of the VER results in the same quantity of each input as the tariff. This is the same as the first case in the variety model

Just like Eq.(2.30), Eq.(2.33) can be transformed and normalised into the equation as follows:

$$1 - \bar{r} = (1 - \tau)^{\alpha(1-\alpha)} (1 - \alpha + \alpha\tau) \alpha^{(1+\alpha)(1-\alpha)} \bar{r}^{\alpha(1-\alpha)} \quad (2.34)$$

where $\bar{r} = q_Q^*/n$ is the ratio of marginal quality under a VER to the highest quality in the industry.

The national income in the regime of a VER therefore can be written:

$$\begin{aligned} Y_{NatQ} &= (1 - \alpha)Y \\ &= (1 - \alpha)(1 - \tau)^{\alpha(1-\alpha)} \alpha^{2\alpha(1-\alpha)} c_1^{-\alpha(1-\alpha)} L \sum_{i=N_Q^*}^N (q^{\kappa_i})^{\alpha(1-\alpha)} \\ &= (1 - \alpha)(1 - \tau)^{\alpha(1-\alpha)} \alpha^{2\alpha(1-\alpha)} c_1^{-\alpha(1-\alpha)} L \int_{q_Q^*}^n f(q)(q)^{\alpha(1-\alpha)} dq \\ &= (1 - \alpha)[n^{1(1-\alpha)} - q_Q^{*1(1-\alpha)}] \phi \end{aligned} \quad (2.35)$$

where $\phi = (1 - \tau)^{\alpha(1-\alpha)} \alpha^{2\alpha(1-\alpha)} c_1^{-\alpha(1-\alpha)} L(1 - \alpha)/(n - 1)$.

The ratio of national income with a tariff to that with a VER can be written as:

$$Y_{Nat\tau}/Y_{NatQ} = [(1 - \alpha + \alpha\tau)/(1 - \alpha)][(1 - \tilde{r}^{1(1-\alpha)})/(1 - \bar{r}^{1(1-\alpha)})] \quad (2.36)$$

If the ratio is less than 1, national income with a tariff is smaller than that with a VER.

Define a function $g^m(\alpha, \tau)$ as:

$$\begin{aligned} g^m(\alpha, \tau) &= (Y_{Nat\tau}/Y_{NatQ}) - 1 \\ &= [(1 - \alpha + \alpha\tau)/(1 - \alpha)][(1 - \tilde{r}^{1(1-\alpha)})/(1 - \bar{r}^{1(1-\alpha)})] - 1 \end{aligned} \quad (2.37)$$

where $1 - \tilde{r} = (1 - \tau)^{1(1-\alpha)}(1 - \alpha)\alpha^{(1+\alpha)(1-\alpha)}\tilde{r}^{\alpha(1-\alpha)}$,

$1 - \bar{r} = (1 - \tau)^{\alpha/(1-\alpha)}(1 - \alpha + \alpha\tau)\alpha^{(1+\alpha)(1-\alpha)}\bar{r}^{\alpha(1-\alpha)}$, and $0 < \alpha, \tau < 1$.

Therefore, if $g^m(\alpha, \tau) < 0$, then a VER is proved to be superior to a tariff.^{2.5}

^{2.5} Since \tilde{r} and \bar{r} are both a function of α and τ from Eq.(2.30) and (2.34). The ratio is also a function of α and τ .

2.3.1.2 $\alpha q \leq 1$ (Limit pricing)

The leader sets a price that is sufficiently below the monopoly price so as to make it just barely unprofitable for the next best quality to be produced. The limit pricing is equal to qc_1 . (If the leader prices at $qc_1 - \varepsilon$, where ε is an arbitrarily small positive amount, then the producer of the next best quality can charge at most $c_1 - \varepsilon/q$, which results in negative profits.)

The inverse derived demand function for the leading-edge good (with quality level q^{κ_i}) of the i th input is given by its marginal productivity schedule:

$$p_{i\kappa_i} = qc_1 = \alpha L^{1-\alpha} (q^{\kappa_i})^\alpha \cdot (x_{i\kappa_i})^{\alpha-1} \quad (2.38)$$

so,

$$x_{i\kappa_i} = L(\alpha/q)^{1/(1-\alpha)} (q^{\kappa_i})^{\alpha/(1-\alpha)} c_1^{-1/(1-\alpha)} \quad (2.39)$$

Imposing an Ad Valorem Tariff τ

Assuming initially that the domestic government imposes an ad valorem tariff τ on the imported inputs, the profits of the i th foreign firm are given as:

$$\begin{aligned}\pi_{i\kappa_i} &= [(1 - \tau)p_{i\kappa_i} - c_1]x_{i\kappa_i} \\ &= (1 - \tau)(q - 1)(\alpha/q)^{1/(1-\alpha)} L(q^{K_i})^{\alpha/(1-\alpha)}\end{aligned}\quad (2.40)$$

Again, a large number of inputs are available in the foreign country and can be supplied to the domestic country after a foreign firm has incurred the fixed cost to enter the domestic market, which is linearly increasing in the number of imported inputs, $c_0 = \mu N$. Firms will incur the fixed cost and supply an input if the monopoly profits are just equal to the fixed cost.

The number of imported input can be obtained by equating the monopoly profits with the fixed cost of supplying the marginal input N^* to the domestic market, $\pi_{i\kappa_i} = \mu N^*$, which yields:

$$N_\tau^*(\tau) = (1/\mu)(1 - \tau)(q - 1)(\alpha/q)^{1/(1-\alpha)} c_1^{-\alpha/(1-\alpha)} L(q_\tau^*)^{\alpha/(1-\alpha)} \quad (2.41)$$

where q_τ^* is the quality of the marginal input N_τ^* under the regime of a tariff, and is called the marginal quality in the industry under a tariff.

Assuming that the quality of different sectors in the developed world is uniformly distributed over $(1, n)$, where $n > 1$, the density function of the quality distribution is:

$$f(q^{\kappa_i}) = 1/(n - 1) \quad (2.42)$$

Therefore, the number of firms producing inputs whose quality locates between q_τ^* and n , in the regime of a tariff, is given as in Eq.(2.28):

$$N_\tau^* = N \int_{q_\tau^*}^n f(q^{\kappa_i}) d(q^{\kappa_i}) = N(n - q_\tau^*)/(n - 1)$$

Combining (2.28) and (2.41), the critical value of marginal quality under a tariff is given as the solution to the following equation:

$$\mu N(n - q_\tau^*)/(n - 1) = (1 - \tau)(q - 1)(\alpha/q)^{1/(1-\alpha)} c_1^{-\alpha/(1-\alpha)} L(q_\tau^*)^{\alpha/(1-\alpha)} \quad (2.43)$$

If we divide both sides of Eq.(2.43) by n , and use the same normalisation as in the previous section:

$\mu N c_1^{\alpha \cdot (1-\alpha)} q^{1 \cdot (1-\alpha)} n^{(1-\alpha) \cdot \alpha} / (q-1)(n-1)L = 1$, and Eq.(2.43) becomes:

$$1 - \tilde{r} = (1 - \tau) \alpha^{1/(1-\alpha)} \tilde{r}^{\alpha \cdot (1-\alpha)} \quad (2.44)$$

where $\tilde{r} = q_\tau^*/n$ is the ratio of marginal quality under a tariff to the highest quality in the industry.

National income is equal to labour's share of final output plus the tariff revenue collected by the government. Hence national income can be written as:

$$\begin{aligned} Y_{Nat\tau}(\tau) &= (1 - \alpha + \tau\alpha)Y(\tau) \\ &= (1 - \alpha + \tau\alpha)L^{1-\alpha} \sum_{i=N_\tau^*}^N (q^{\kappa_i})^\alpha (x_{i\kappa_i})^\alpha \\ &= (1 - \alpha + \tau\alpha)(\alpha/q)^{\alpha \cdot (1-\alpha)} c_1^{-\alpha \cdot (1-\alpha)} L \int_{q_\tau^*}^n f(q) \cdot (q)^{\alpha \cdot (1-\alpha)} dq \\ &= (1 - \alpha + \tau\alpha)[n^{1 \cdot (1-\alpha)} - q_\tau^{*1 \cdot (1-\alpha)}] \varphi \end{aligned} \quad (2.45)$$

where $\varphi = (\alpha/q)^{\alpha \cdot (1-\alpha)} c_1^{-\alpha \cdot (1-\alpha)} L (1 - \alpha)/(n - 1)$

Imposing a VER

Again, if the domestic government imposes a VER on the foreign country, with the same quantity of imported input of each variety as in the case of a tariff, the prices would be the same in both cases.

Again, we can get the equations for the profits of the foreign firm, and the variety of imported inputs in the regime of a VER as follows:

$$\pi_Q = (q - 1)(\alpha/q)^{1/(1-\alpha)} c_1^{-\alpha/(1-\alpha)} L(q^{\kappa_i})^{\alpha/(1-\alpha)} \quad (2.46)$$

$$\begin{aligned} N_Q^* &= N(n - q_Q^*)/(n - 1) \\ &\equiv (1/\mu)(q - 1)(\alpha/q)^{1/(1-\alpha)} c_1^{-\alpha/(1-\alpha)} L(q_Q^*)^{\alpha/(1-\alpha)} \end{aligned} \quad (2.47)$$

The critical value of marginal quality under a VER, q_Q^* , is given as the solution to following equation:

$$\mu N(n - q_Q^*)/(n - 1) = (q - 1)(\alpha/q)^{\alpha/(1-\alpha)} c_1^{-\alpha/(1-\alpha)} L(q_Q^*)^{\alpha/(1-\alpha)} \quad (2.48)$$

Eq.(2.48) can be transformed and normalised into:

$$1 - \bar{r} = \alpha^{1/(1-\alpha)} \bar{r}^{\alpha/(1-\alpha)} \quad (2.49)$$

where $\bar{r} = q_Q^*/n$ is the ratio of marginal quality under a VER to the highest quality in the industry.

Therefore national income in the regime of a VER can be written as:

$$\begin{aligned} Y_{NatQ} &= (1 - \alpha)Y \\ &= (1 - \alpha)L^{1-\alpha} \sum_{i=N_Q^*}^N (q^{\kappa_i})^\alpha (x_{i\kappa_i})^\alpha \\ &= (1 - \alpha)(\alpha/q)^{\alpha/(1-\alpha)} c_1^{-\alpha/(1-\alpha)} L \int_{q_Q^*}^n f(q)(q)^{\alpha/(1-\alpha)} dq \\ &= (1 - \alpha)[n^{1/(1-\alpha)} - q_Q^{*1/(1-\alpha)}] \varphi \end{aligned} \quad (2.50)$$

where $\varphi = (\alpha/q)^{\alpha/(1-\alpha)} c_1^{-\alpha/(1-\alpha)} L (1 - \alpha)/(n - 1)$

The ratio of national income with a tariff to a VER can be written as:

$$Y_{Nat\tau}/Y_{NatQ} = [(1 - \alpha + \alpha\tau)/(1 - \alpha)][(1 - \tilde{r}^{1(1-\alpha)})/(1 - \bar{r}^{1(1-\alpha)})] \quad (2.51)$$

Note that the functional form of this ratio is the same as that of the monopoly pricing case. However, the ratios of marginal quality to the highest quality in the industry are different. This implies that the relative magnitude of national income with a tariff and a VER in the cases of monopoly pricing and limiting pricing have the same functional form for the ratios of marginal quality. Moreover, if the relative magnitude of national income is less than 1, national income with the tariff is smaller than national income with a VER.

Define another function $g^\ell(\alpha, \tau)$ as:

$$\begin{aligned} g^\ell(\alpha, \tau) &= (Y_{Nat\tau}/Y_{NatQ}) - 1 \\ &= [(1 - \alpha + \alpha\tau)/(1 - \alpha)][(1 - \tilde{r}^{1(1-\alpha)})/(1 - \bar{r}^{1(1-\alpha)})] - 1 \end{aligned} \quad (2.52)$$

where $1 - \tilde{r} = (1 - \tau)\alpha^{1(1-\alpha)}\tilde{r}^{\alpha(1-\alpha)}$,

$$1 - \bar{r} = \alpha^{1(1-\alpha)}\bar{r}^{\alpha(1-\alpha)},$$

and $0 < \alpha, \tau < 1$.

Hence, if $g^l(\alpha, \tau) < 0$, a VER is proved to be superior to a tariff.

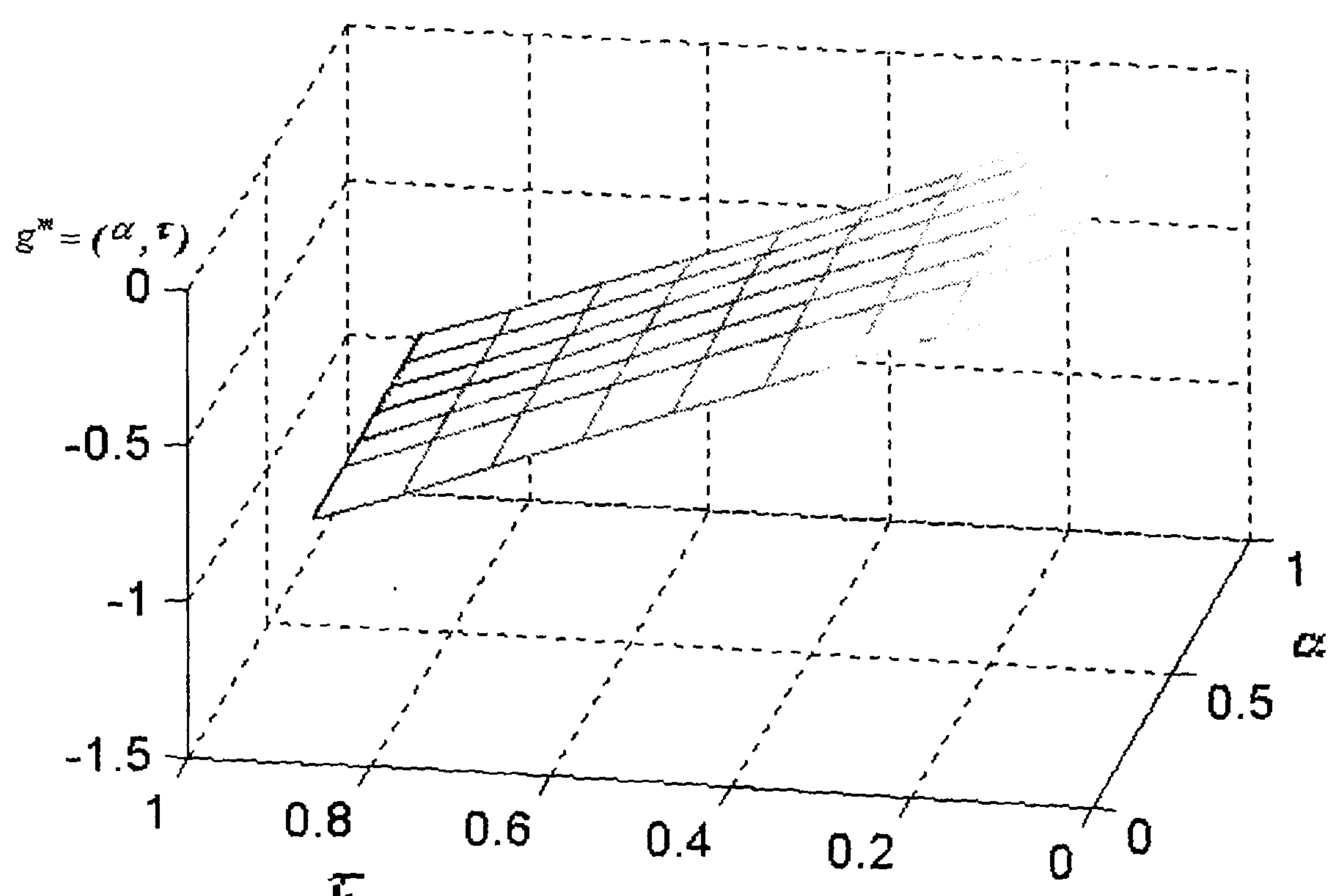
2.3.2 Calibrations

To calibrate this model so that the required counterintuitive result can be obtained, let $\alpha = 0.2, 0.4, 0.5, 0.6, 0.7, 0.8$ and 0.9 and $\tau = 0.1$ to 0.9 in steps of 0.1 . Assuming continuity, we get the 3D diagrams as follows,

Monopoly Pricing

Substituting into Eq. (2.30), (2.34) and (2.37) with $\alpha = 0.2, 0.4, 0.5, 0.6, 0.7, 0.8$ and 0.9 and $\tau = 0.1$ to 0.9 in steps of 0.1 , we get a 3-D diagram for the function g^m corresponding to different values of α and τ as in Figure 2.4.

Figure 2.4: The 3-D diagram for the function g^m



From Figure 2.4, we see that the functional values are all smaller than zero, which means that VER is superior to a tariff when $\alpha = 0.2, 0.4, 0.5, 0.6, 0.7, 0.8$ and 0.9 and $\tau = 0.1$ to 0.9 in steps of 0.1 .

To get a close look at the effects of α and τ to the functional value, we also plot the diagram with fixed α and fixed τ respectively shown as Figure 2.5 and Figure 2.6.

Figure 2.5: The functional value of g^m with fixed α and various τ

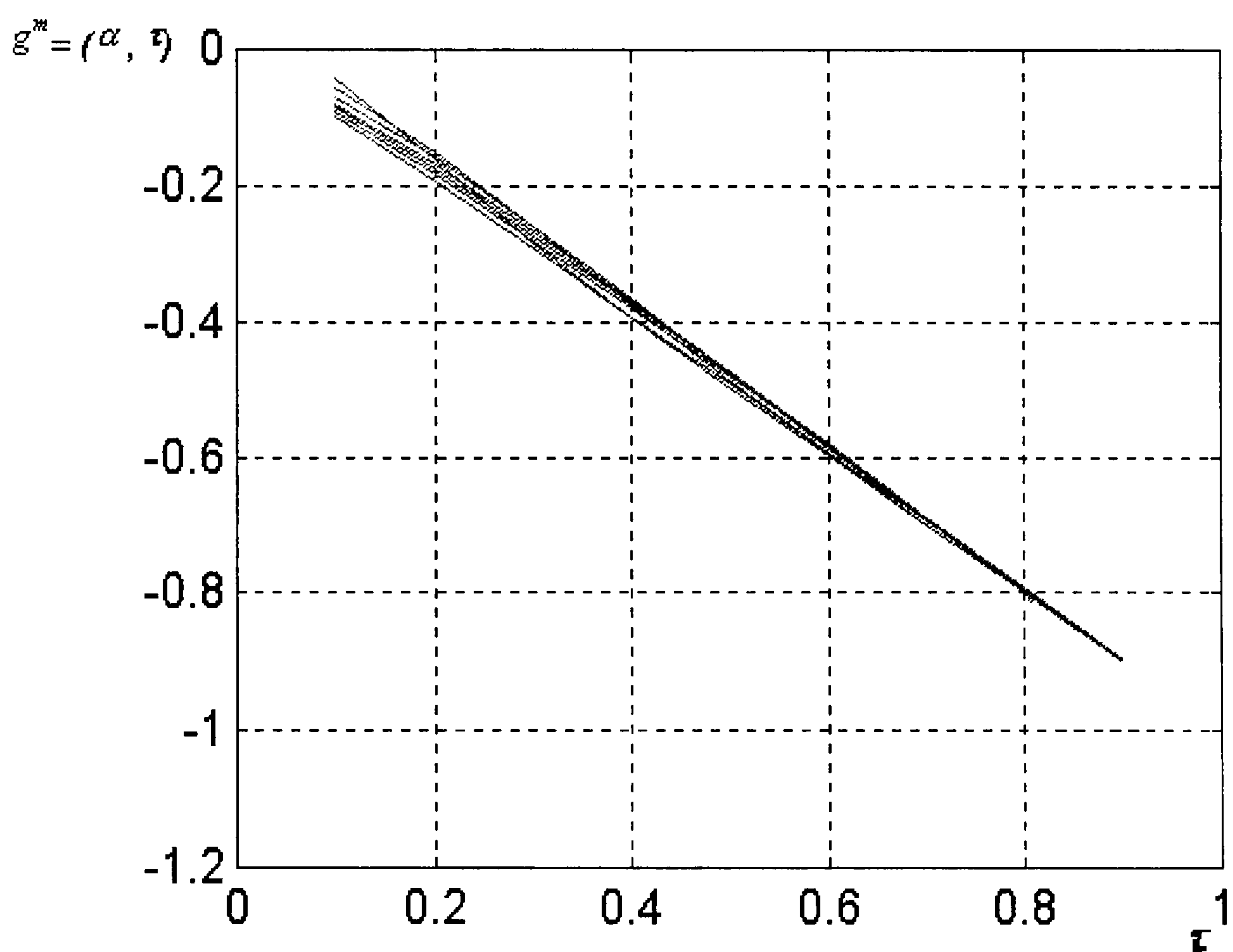


Figure 2.5 shows that, (1) the functional values are negative when $\alpha = 0.2, 0.4, 0.5, 0.6, 0.7, 0.8$ and 0.9 and $\tau = 0.1$ to 0.9 in steps of 0.1 . This implies that under such values of α and τ , national income under the

VER is higher than under an equivalent tariff. (2) Given α fixed, when τ increases, the value of the function g^m decreases. This implies that, given the elasticity of demand, when the tariff is higher (correspondingly θ is also higher), the difference between the national income under a VER and the national income under an equivalent tariff is higher.

Figure 2.6: The functional value of g^m with fixed τ and various α

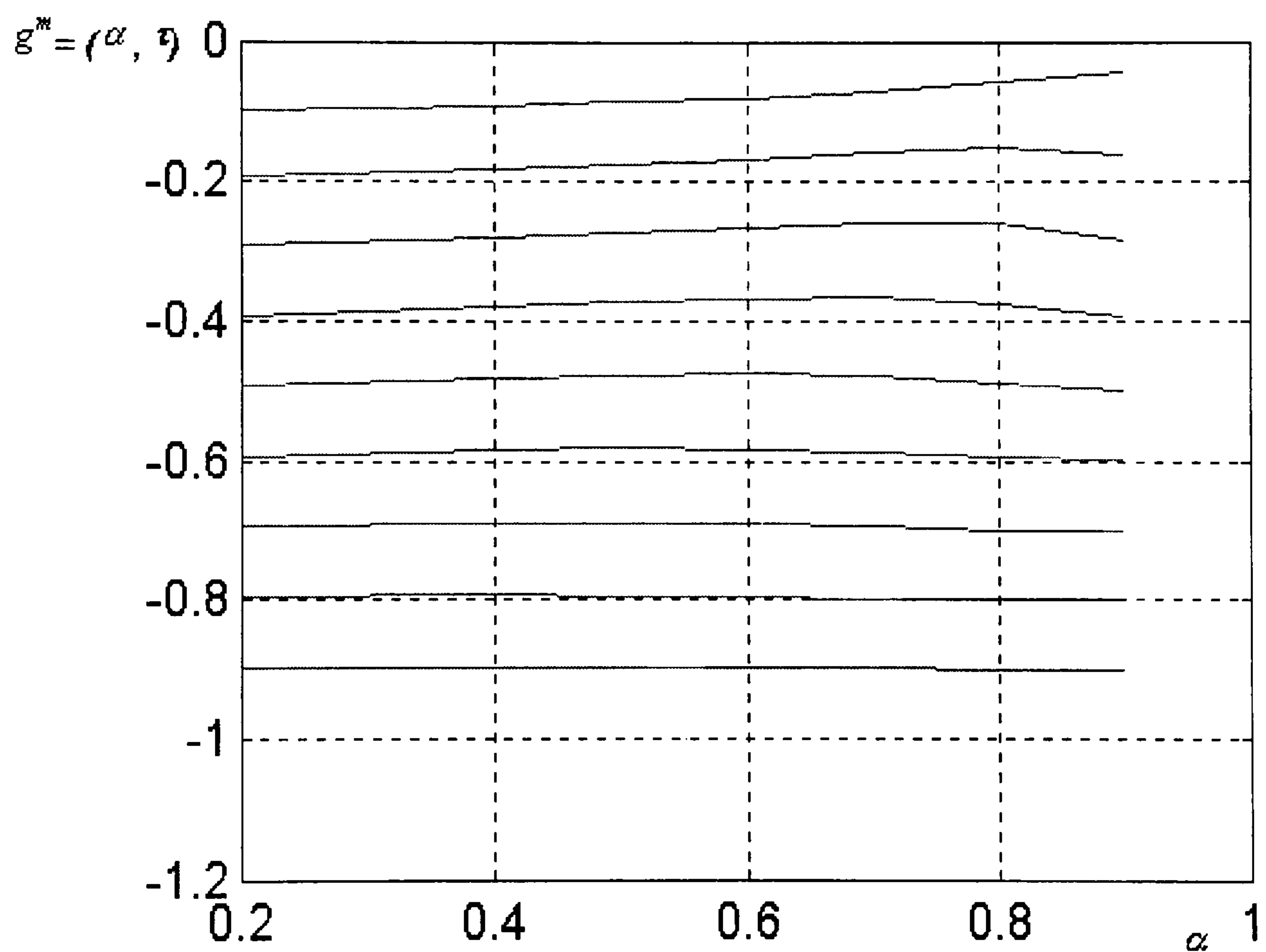


Figure 2.6 shows that, when the value of τ (and θ) is fixed,

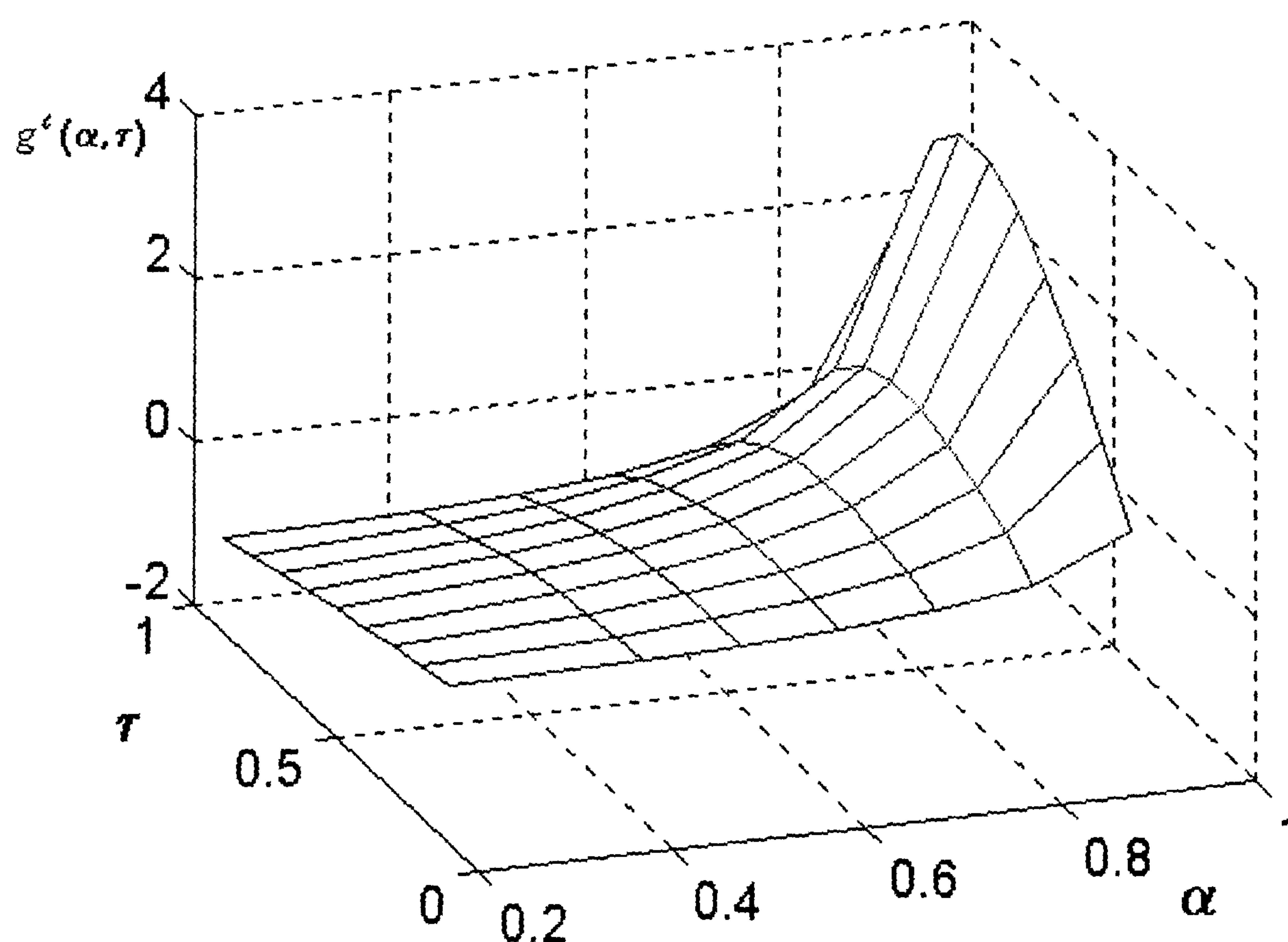
- (1) The functional values are negative regardless of the value of α , which implies that a VER is always superior to a tariff when $\alpha = 0.2$, 0.4, 0.5, 0.6, 0.7, 0.8 and 0.9.

(2) A change in α does not have significant impact on the functional value. That is, the difference between the national income under a VER and the national income under a tariff does not change significantly according to the change of α .

Limit Pricing

The ratio of marginal quality to the highest quality in an industry with a tariff, \tilde{r} , is obtained as a function of τ by substituting $\alpha = 0.2, 0.4, 0.5, 0.6, 0.7, 0.8$ and 0.9 and $\tau = 0.1$ to 0.9 in steps of 0.1 into Eq.(2.44), (2.49) and Eq.(2.52), we get a 3-D diagram for the function g^ℓ corresponding to different values of α and τ as in Figure 2.7.

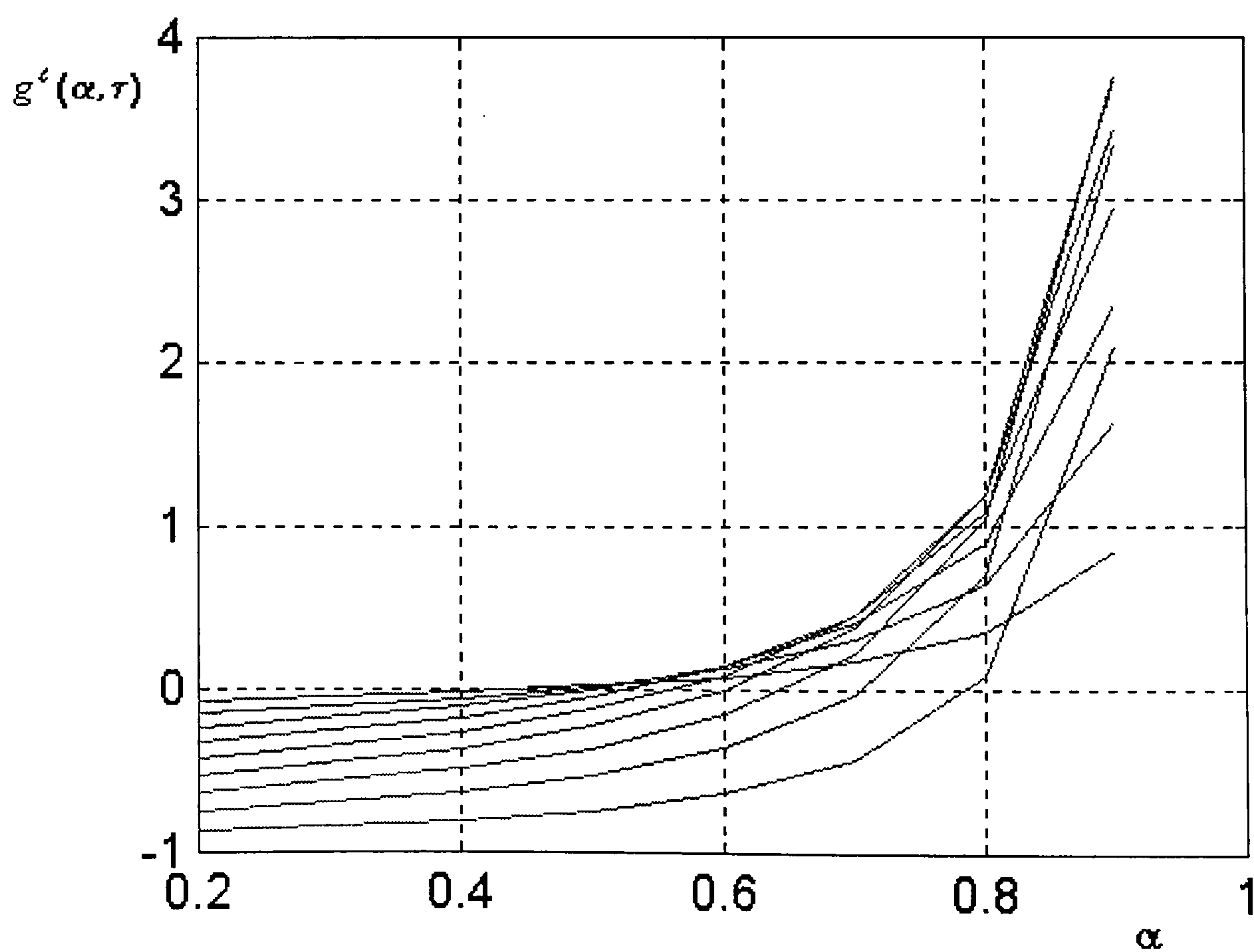
Figure 2.7: The 3-D diagram for the function g^ℓ



From Figure 2.7, we see that the functional value tends to be negative when α is smaller, but it tends to be positive when α is getting higher. For example, when α is less than 0.4, the functional value is below zero regardless of the value of τ .

However, when α is higher than 0.8, the functional value tends to be above zero, regardless of the value of τ . For the sake of clarity, the changes of functional value corresponding to the change in α are shown in Figure 2.8. Figure 2.8 shows that a VER is more likely to be superior to a tariff when α is smaller. That is, when the constant elasticity of demand is lower, it is more likely that a VER is superior to a tariff.

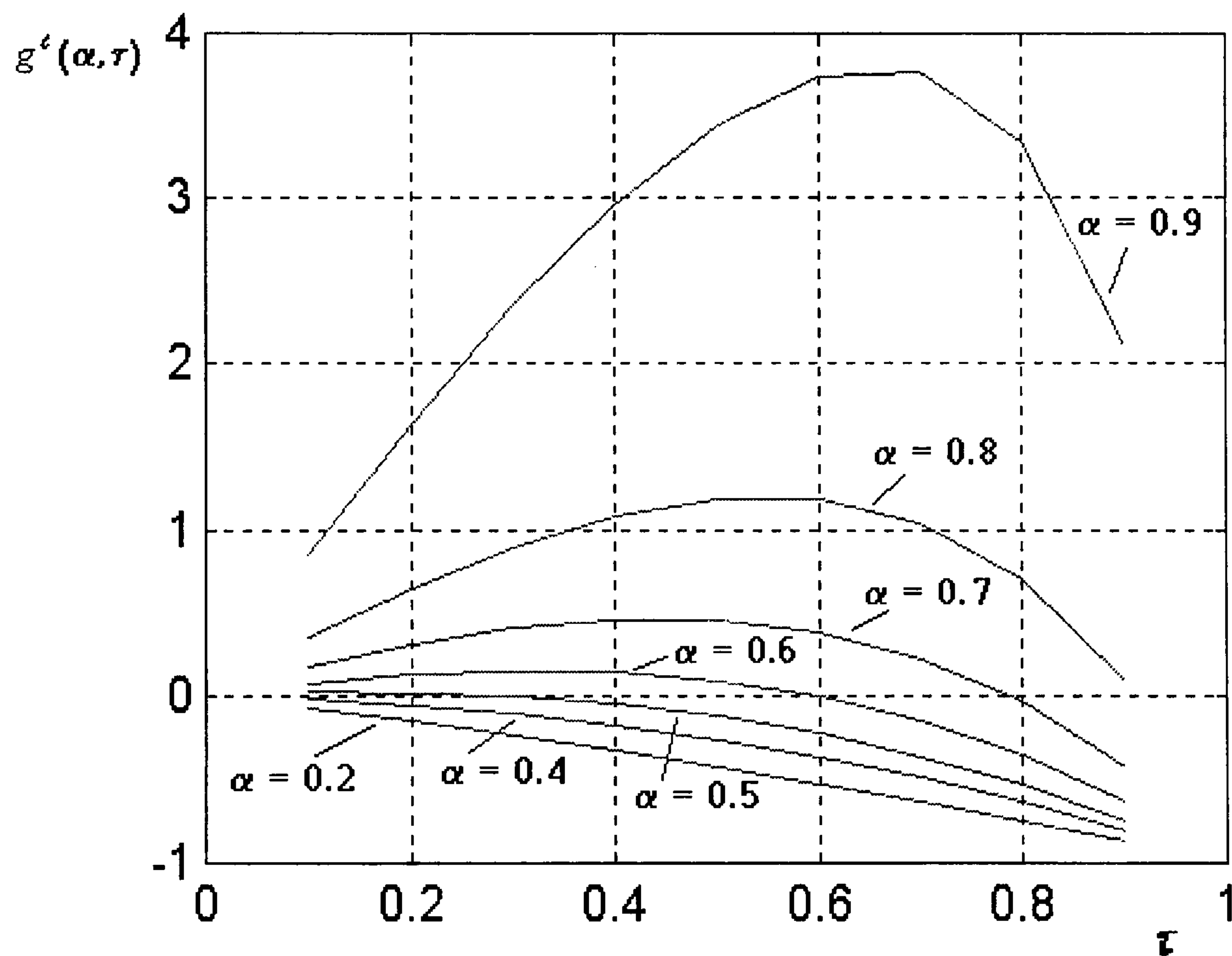
Figure 2.8: The functional value of g^ℓ with fixed τ and various α



From Figure 2.6 and Figure 2.8, we see that α is a significant factor in the case of limit pricing but not in the case of monopoly pricing.

Finally, the relationship between τ and the functional values of $g^\ell(\alpha, \tau)$ is shown as in Figure 2.9.

Figure 2.9: The functional value of g^ℓ with fixed α and various τ



From Figure 2.9, we see that, the functional value of g^ℓ is negative only if,

(1) α is relatively small, for example, $\alpha = 0.2$, or

(2) τ is big enough when α is high. For example, when $\alpha = 0.6$, $\tau > 0.6$.

The results imply that, a VER can be superior to a tariff if,

(3) The elasticity of demand is small enough, or

(4) The rate of tariff (or VER) is high enough when the elasticity of demand is high.

2.4 Conclusion

Bhagwati (1965) and Krishna (1989) have shown that under imperfect competition, the anti-competitive effect as well as the loss of quota rent to the foreign firms makes the VER inferior to the tariff. However these models did not consider the effect of such protective trade policies on product variety nor product quality. Motivated by P. Romer (1994), we have taken into account the effect on product variety and quality and have revised the conventional wisdom.

Two endogenous growth models were used in our framework. The first model of product variety expansion is based on P. Romer (1987, 1990), which specifies various types of productive inputs in the context of technological changes and economic growth. The second model of product quality improvement is based on Chapter 7 of Barro and Sala-i-Martin (1995) which allows for improvement in quality or productivity of each type of productive inputs that are produced and improved by a monopolistically competitive foreign industry in a developed country.

We have incorporated these two endogenous models into the comparison of the national income generated under a tariff and a VER. These models have successfully constructed the framework taking the number of intermediate inputs as one of the key factors in the production function. By using these models, we have been able to treat the number of inputs which are imported into a developing country as one of the major factors that determine the national income of the

developing country. Since a protective trade policy will finally determine the number of goods to be imported, a developing country has to consider the effect of such policy on the number of input when choosing a policy to be imposed.

In our simple models, where a country imports products which are differentiated in variety or quality, the imports are supplied by a monopolistically competitive foreign industry. Hence we allow the country to have the possibility of introducing new goods. Imposing protective trade policies therefore will affect both the price of imports and either variety or quality of imports. The tariff allows domestic economy to enjoy the tariff revenue at the cost of stopping foreign firms to supply new goods due to less profitability to foreign firms.

On the contrary, the VER has less effect on profits and hence has less effect on product variety or quality than the tariff. In some circumstances, the benefits of having more variety or different quality of import will offset the cost of losing the quota revenue. Hence a VER may be superior to a tariff. Therefore if a developing country has to use a protective trade policy, the tariff is not always better than the VER as conventional orthodoxy suggests.

The models do not allow the domestic country to engage in product innovation or imitation. However, developing countries may enjoy knowledge spill-over from developed country and start to practice reverse engineering from foreign equipment, If they can do so for a fixed

cost, they may be able to capture some pure rent that would otherwise go to the foreign exporters.

Finally, the result also depends on the simple functional form. The functional form of variety expansion model is a simple special case of the constant elasticity of substitution of the capital goods. The goods are neither direct complements nor direct substitutes. The additionally separable form for the intermediate goods means that the marginal product of one intermediate good is independent of the quantity employed of another intermediate good. This assumption is crucial since it implies that discoveries of new type of goods do not make any existing types obsolete.

Chapter 3

Foreign Direct Investment, Multinational Firms and the Developing Economy

3.1 Introduction

Foreign Direct Investment (FDI) is defined as international capital flows in which a firm acquires a substantial controlling interest in a foreign firm or sets up a subsidiary in a foreign country (see Krugman and Obstfeld (1997, Ch.7)). Multinational firms often act as vehicles for such international capital movement. By the formation of multinational firms, FDI involves not only a transfer of resources but also the extension of control that serves as the essential purpose.

For the developing countries, FDI provides the opportunity to exploit advanced technology by imitating a new product or a new production process introduced by foreign multinational firms. This is owing to the distinctive nature of technology. As an economic commodity, technology is a peculiar form of knowledge with some properties different from physical capital or capital equipment. The particular features of non-rivalry and at least partial non-excludability are the main differences.

Non-rivalry makes one user of technology unable to prevent another user from utilising simultaneously the same technology. The partial non-

excludability of knowledge suggests that industrial R&D may generate technological spill-overs that apply the knowledge as public good. The distinguishing properties of technology imply that the knowledge may be conveyed simply by investigating a product or inspection of a particular action in the market place that is produced with or involving a certain kind of new technology.

The new technology or information can also be disclosed by indigenous employees. The mobility of highly skilled personnel between foreign owned firms and local producers presents an important route for the spread of technical information among different countries. Advanced technology from abroad combined with domestic resources may produce new knowledge which may further spill over to the local research community, and thereby helps to create even more information or knowledge. FDI therefore may be very important to the growth process of developing countries in terms of exploiting new technology from foreign advanced economies.

The topic of “product cycle” has been discussed heavily among economists. For example, Vernon (1966) claimed that most new goods are developed in the northern industrialised economy and manufactured in the North until their designs are perfected and standardised. Then the Northern firms will be attracted by the lower wage rates of the less developed Southern economy and move their production to the South.

Recent literature suggests that international investment may provide a strong reason for convergence of growth rates, although differences in levels of output and consumption across countries may remain (see for example Alogoskoufis and van der Ploeg (1991), and Grossman and Helpman (1991a)).

When Northern firms move production to the South, they create additional knowledge spill-over for Southern firms by adapting their technology to the Southern economy through FDI (see also Findlay (1978) and Das (1987)). However, the arrival rate of FDI has been set exogenously in these models.

Recently, Glass and Saggi (1999) expanded the Grossman and Helpman (1991b) model of a quality ladder product cycle by introducing FDI to examine the effect of FDI on the rates of innovation, imitation and international technology transfers. By setting implicit functions for FDI in the analysis, they distinguished FDI's dynamic benefits and static effects by assuming multiple channels, through which international technology transfers can spread from the North to the South.

Grossman and Helpman (1992, Ch.11) constructed a model of imitation under a general equilibrium setting and explain how imitation activities in developing countries will affect the long run growth of both the North and the South. Based on their model, this chapter further endogenises FDI through various parameters, and introduces a mechanism under a general equilibrium model to see how the changes in the parameters

can reshape the Grossman–Helpman model and derive the steady state growth rate as well as rates of imitation and FDI.

Micro-economic empirical evidence has revealed that FDI tends to be created by firms in the industries that appear to possess high levels of R&D relative to sales, a large share of professional and skilled workers in their workforces, products that are new and/or technologically complex and high levels of product differentiation and advertising (See, for examples, Caves (1982), Buckley and Casson (1976), Brainard (1993a,b) and Teece (1986)).

However, the added costs including communications and transport costs, higher cost of stationing personnel abroad, difficulty of language and business practice, cultural barriers, and being outside the local business and government networks do stop foreign firms from entering the domestic market (Horstmann and Markusen 1992). Hence foreign multinational firms must be significantly different from domestic firms, otherwise they will not find it profitable to enter the domestic market.

Dunning (1977, 1981) raised three advantages which include ownership advantage, location advantage and internationalisation advantage, and argued that it is these three conditions that are essentially the incentives for a firm to undertake direct investment abroad.

First, since a multinational firm tends to possess technological superiority, the ownership advantage ensures the multinational firm has monopoly power or cost advantage over the production process or a

new product. This advantage may be enforced by a patent system, blueprint or trade secret.

Second, the location advantage may be generated by trade barriers, such as tariffs, quotas and transport costs. Lower cost of local input also appears to be another location advantage which is particularly important in attracting production from developed to developing countries.

Finally, internationalisation advantage means the product or process is exploited internationally within the firm, rather than at arm's length through markets. It is more profitable to carry out some transactions within a firm rather than between firms due to the advantages of internationalisation for technology transfer (including management skills) and for vertical integration (Krugman and Obstfeld (1997, Ch.7)). This explains why multinational firms prefer the costly set-up of a production facility abroad rather than just selling the blueprints to or licensing a foreign firm.

So far, our discussion has covered the advantages for the multinational firms. We also need to remind ourselves that imitation by firms in the developing countries also requires certain minimum levels of resources, skills or costs to be surmounted before imitation can begin (in our model, these inhibitors are grouped under parameter a^m). The above discussion therefore suggests that useful further research could be done on disaggregating these inhibitors separately, and studying their effects on growth for developing countries.

The model in the next section consists of multinational firms exploiting these three advantages, especially the internationalisation advantage. The multinational firms fully control the subsidiary, and practise local advantage by hiring local resources, i.e., labour, while the internationalisation advantage ensures more efficient management skills and more advanced production technology. However, there is no physical capital flow in this model. The model is based on Grossman and Helpman (1992, Ch.11).

The paper is organised in the following manner. Section 3.2 is the model, a framework which depicts the relationship between a developed economy and a developing economy linked by foreign direct investing companies. Section 3.3 derives the conditions for a steady-state equilibrium. Section 3.4 discusses relative wage rates. In Section 3.5 we present numerical calibrations and policy implications for steady-state equilibrium and relative wage rate. Section 3.6 explores the possibility for governmental intervention in technology development and Section 3.7 concludes.

3.2 The Model

We assume that the intentional (endogenous) expansion of product variety and technological diffusion serve as the channels to long-run economic growth. The property of non-appropriability of knowledge prevents the incentive to innovate from ceasing.

3.2.1 Consumer Behaviour

There are two countries, namely, the North and the South. Households in both countries consume a variety of differentiated products and only these goods manufactured from a single primary input. Consumers in these countries share identical preference, and maximise utility over an infinite horizon (this presentation of preference applies when households can be viewed as infinitely lived dynasties and when each generation takes into account the well-being of its progeny (see Barro (1974))). Inter-temporal preferences take the form as

$$U_t = \int_t^{\infty} e^{-\rho(\tau-t)} \log D(\tau) d\tau, \quad (3.1)$$

Here $D(\tau)$ represents an index of consumption at time τ , and ρ is the subjective discount rate. Instantaneous utility at a moment in time is measured by the natural logarithm of the consumption index.

The index D reflects households' tastes for diversity in consumption. These tastes generate demand for differentiated products, and innovation serves to expand the set of available varieties. There is an infinite set of possible products while at time t only $n(t)$ varieties of products are available (or have been invented before time t). n is the number of available varieties.

D is assumed to take the form of Dixit and Stiglitz (1977), which imposes a constant elasticity of substitution between every two various types of goods. D is given as

$$D = \left[\int_0^n x(R)^\alpha dR \right]^{1/\alpha}, \quad 0 < \alpha < 1, \quad (3.2)$$

Therefore, the elasticity of substitution between any two products is $\varepsilon = 1/(1 - \alpha) > 1$. It is straightforward to show that the demand for each variety is given as

$$x(R) = E p(R)^{-\varepsilon} / \int_0^n p(R')^{-\varepsilon} dR', \quad (3.3)$$

where $p(R)$ is the price of one particular variety R . The aggregate demand for good R has exactly the same form, but with E representing aggregate spending.

The representative household maximises Eq.(3.1), subject to an inter-temporal budget constraint, which requires that the optimal allocation of spending over time be given by

$$\dot{E}/E = r - \rho \quad (3.4)$$

Therefore, spending in each region grows at a rate equal to the difference between the interest rate and the subjective discount rate. We normalise world spending to one at every moment in time so that $r = \rho$ in a steady state and the regional shares in aggregate world demand are constant.

Firms invest in R&D financed by issuing equity. We assume that Northern firms engage in innovative R&D while Southern firms do not innovate, but only imitate the new goods introduced by Northern firms. Imitation is treated as an investment activity similar to new product development.

3.2.2 Producer Behaviour

Firms in the north compete to innovate new varieties of product. Once having succeeded in innovation, the firm is rewarded a perpetual monopoly power over manufacturing the new product. A Southern firm can also manufacture some product if it has successfully imitated the same technology required for manufacturing goods which are previously produced by Northern firms. Assume that there are $n^N(t)$ Northern firms and $n^S(t)$ Southern firms at time t .

However, due to the attraction of lower labour cost, some of the Northern firms (called FDI firms in the following) will set up the subsidiary in the South and produce with $(1 + \beta)$ unit of labour per unit of output, where β measures the added costs in terms of unit of labour that the Northern firm has to pay for entering the market. The added costs β can represent communications and transport costs, higher cost of stationing personnel abroad, difficulty of language and business practice, barriers of customers, or being outside the local business and government networks. $(1 + \beta)w^S < w^N$. We assume that such firms no longer manufacture final goods but still maintain innovative R&D in the North. These events provide the only source for the Southern firms' imitative activities. That is, we assume that the Southern firms are only capable of learning the technology through foreign direct investment.

Hence, $n^N(t) = n_1^N(t) + n_2^N(t)$, where $n_1^N(t)$ is the index of the number of the Northern firms who produce in the North at time t and $n_2^N(t)$ denotes the number of Northern firms who produce in the South at time t . The good can be manufactured with one unit of labour per unit of output in either region. Thus, marginal costs are w^N , w^S , and $(1 + \beta)w^S$; for firms that produce in the North, for those that produce in and are owned by the South and for those that are owned by the North but produced in the South respectively.

Pricing Condition

We have assumed that the Northern owned firms possess the advantage of new technology. A Northern firm that is uniquely able to produce some innovative good faces competition only from other horizontally differentiated brands. Hence, a Northern firm faces the demand in Eq.(3.3) and maximises profit by setting its profit at a fixed mark-up over unit cost.

Let the demand function have a constant price elasticity of ε and a unitary expenditure elasticity for each product. Because the cost of each unit of the good made by firm i , $i \in [0, n = n^S + n_1^N + n_2^N]$ is constant, the profit-maximising solution is that pricing equations take the familiar form of constant proportional mark-ups for the two different types of Northern firms:

$$p_1^N = w^N / \alpha \quad (3.5a)$$

$$p_2^N = (1 + \beta)w^S / \alpha \quad (3.5b)$$

For the Southern firms, assume that $\alpha(1 + \beta) > 1$ so that $p_2^N = (1 + \beta)w^S / \alpha$ are high enough that they allow the Southern firms to undercut the prices to a constant proportional mark-up,

$$p^S = w^S / \alpha \quad (3.5c)$$

and take over the monopoly power from the Northern firms once they succeed in copying the technology.

The monopolist realises sales of x_i^N , $i = 1, 2$ and x^S , and earns respective operating profits of:

$$\pi_1^N = (1 - \alpha)p_1^N x_1^N \quad (3.6a)$$

$$\pi_2^N = (1 - \alpha)p_2^N x_2^N, \text{ and} \quad (3.6b)$$

$$\pi^S = (1 - \alpha)p^S x^S \quad (3.6c)$$

3.2.3 Innovation and Imitation

Free Entry Conditions

Both types of Northern firms develop new varieties of goods in the North. Assume that a successful innovative activity requires R&D efforts in the North, and that is dependent on the knowledge capital stock, K^N . K^N is proportional at every moment of time, to the economy's cumulative experience at R&D, measured by the number of total varieties, n . In addition, $a^N/K^N = a^N/n$ units of labour are assumed to be needed to develop a new variety (or blueprints) where a^N is a constant. That implies that the feedback from successful Southern imitation makes no contribution to the Northern innovative activities because of duplication.

Given free entry into R&D, value maximisation implies that

$$v_1^N = v_2^N \leq w^N a^N / n, \text{ with equality whenever } \dot{n} > 0, \quad (3.7)$$

where v^N is the value of a Northern brand that has not been copied.

The imitation is an investment activity similar to new product development. The South accumulates public knowledge due to spill-over from local investment in technology in addition to the technology brought by foreign direct investment. Cost of imitation is typically cheaper than innovation so that $a^m / (n^S + n_2^N)$ units of labour are needed to imitate a variety, where $a^m < a^N$. Similarly, given free entry into imitation,

$$v^S \leq w^S a^m / (n^S + n_2^N), \text{ with equality whenever } \dot{n} > 0, \quad (3.8)$$

where v^S is the value of a typical Southern brand.

No-arbitrage Condition

Firms issue equity to finance R&D activity. Since firms that manufacture in the North have no fear of being copied, the arbitrage in capital markets ensures equality between yields on equity and that on a riskless loan. Thus equilibrium in the Northern capital market implies the no-arbitrage condition

$$\pi_1^N / v_1^N + \dot{v}_1^N / v_1^N = r^N, \quad (3.9a)$$

where r^N is the yield on a Northern bond.

A FDI firm which produces in the South face a risk that its product may be targeted for imitation by another Southern firm. This FDI firm holding the blueprint for a new product earns a profit of $\pi_2^N dt$ during an interval of length dt if it has not been copied by any Southern firm. However, during this time interval, $\dot{n}^S dt$ products will be copied. Hence there is a possibility equal to $\dot{n}^S dt / n_2^N$ that this FDI firm will lose its monopoly position. Once the product has been copied, the firm will suffer a capital loss of size v_2^N . Otherwise, the firm will gain (or lose) $\dot{v}_2^N dt$. The total expected return on shares in a FDI firm is given by

$$\pi_2^N dt - \dot{n}^S v_2^N dt / n_2^N + \left(1 - \dot{n}^S dt / n_2^N\right) \dot{v}_2^N dt.$$

To get the no-arbitrage condition on financial assets, equate this to the return on a loan of size v_2^N , divide the resulting equation by $v_2^N dt$, and take the limit as dt becomes small, which gives

$$\pi_2^N / v_2^N + \dot{v}_2^N / v_2^N - \dot{n}^S / n_2^N = r^N \quad (3.9b)$$

Once a Southern firm has copied successfully the technology for some products, it earns an infinite stream of oligopoly profits. In the time interval dt , the successful firm earns profit $\pi^S dt$ and also a capital gain (or loss) of $\dot{v}^S dt$. These total return on equity must be equal to the opportunity cost, r^S of the invested capital. The no-arbitrage condition in the Southern financial market is therefore:

$$\pi^S / v^S + \dot{v}^S / v^S = r^S \quad (3.9c)$$

Market Clearing Condition

The final requirement for an equilibrium is labour market clearing. The population in the North and South supply L^N and L^S units of labour force at every moment in time. The labour is supplied to R&D and manufacturing sectors. In the North, the manufacturing sector demands $n_1^N x_1^N$ units of labour while the R&D sector requires $a^N \dot{n} / n$ units of labour. Labour market equilibrium in the North requires

$$a^N \dot{n} / n + n_1^N x_1^N = L^N, \quad (3.10)$$

Southern labour is distributed among the FDI manufacturing industries, and the Southern manufacturing and imitative industries. Imitation

needs $a^m \dot{n}^S / (n^S + n_2^N)$ units of labour. Southern manufacturing requires $n^S x^S$ units, while Northern manufacturing uses $(1 + \beta) n_2^N x_2^N$ units of Southern labour. Labour market equilibrium is given as

$$a^m \dot{n}^S / (n^S + n_2^N) + n^S x^S + (1 + \beta) n_2^N x_2^N = L^S \quad (3.11)$$

3.3 Steady-State Equilibrium

To solve for a steady-state equilibrium, we assume that the market shares of the differentiated products that are Southern manufactured, FDI produced and Northern made in the North are $\lambda^S = n^S / n$, $\lambda_2^N = n_2^N / n$, and $\lambda_1^N = n_1^N / n$ respectively, and

$$\lambda^S + \lambda_2^N + \lambda_1^N = 1. \quad (3.12)$$

In the long run λ^S, λ_2^N and λ_1^N must approach constants, which implies

$$\dot{n}^S / n^S = \dot{n}_1^N / n_1^N = \dot{n}_2^N / n_2^N = \dot{n} / n = g, \quad (3.13)$$

that is, $g^S = g_1^N = g_2^N = g$ in a steady-state.

Defining $m = \dot{n}^S / n_2^N$ as the rate of imitation, the relationship between λ^S and λ_2^N is given as

$$m\lambda_2^N = g\lambda^S. \quad (3.14)$$

To investigate the effects of FDI, define the rate of outward FDI from the North as $f = \dot{n}_2^N / n_1^N$. Then combining (3.12) and (3.14), λ_1^N , λ_2^N and λ^S can be written as:

$$\lambda_1^N = g^2 / (g^2 + gf + mf) \quad (3.15)$$

$$\lambda_2^N = gf / (g^2 + gf + mf), \text{ and} \quad (3.16)$$

$$\lambda^S = mf / (g^2 + gf + mf), \quad (3.17)$$

The profits of each firm in a steady state can be given in two different ways. In a steady state, the general equilibrium (if it exists) has to satisfy four partial market equilibrium conditions. The four market equilibrium conditions are: pricing conditions, free entry conditions, no-arbitrage conditions, and market clearing conditions. Using pricing conditions and market clearing conditions will generate one form of a firm's profit, while the other two conditions together can yield the other form of firm's profit. The general equilibrium is therefore given by equating a firm's profit from the two paths for each firm.

3.3.1 The Northern Firm

From pricing condition (3.5a) and (3.6a) and market clearing condition (3.10), the profit of the Northern firms is given as:

$$\pi_1^N = (1 - \alpha)w^N (L^N - a^N g)(g^2 + gf + mf) / \alpha n g^2 \quad (3.18)$$

In a steady state, the aggregate value of stock in either region remains constant. The value of the typical Northern firm falls at the rate of production development. It is also true that $r^i = \rho$, $i = N, S$ in the long-run. It turns out that no-arbitrage condition of Northern firms (3.9a), after substituting into free entry condition (3.7), becomes:

$$\pi_1^N = (\rho + g)w^N a^N / n \quad (3.19)$$

The equality of (3.18) and (3.19) yields the steady state condition for Northern firms as:

$$\rho + g = [(1 - \alpha) / \alpha][(L^N / a^N) - g](g^2 + gf + mf) / g^2 \quad (3.20)$$

Equation (3.20) describes the relationship among the long-run growth rate, the rate of imitation, and the rate of FDI for the typical Northern firm in a steady state.

3.3.2 The FDI Firm

Similarly, the profit of the FDI firms can be given in a similar way. From pricing conditions (3.5b) and (3.6b), the profit of FDI firms can be further written as: $\pi_2^N = [(1 - \alpha) / \alpha](1 + \beta)w^S x_2^N$.

Since the fact that $x^S : x_1^N : x_2^N \equiv (p^S)^{-\varepsilon} : (p_1^N)^{-\varepsilon} : (p_2^N)^{-\varepsilon}$ from (3.3), (3.5c) and (3.6c), we have $x^S = (1 + \beta)^\varepsilon x_2^N$. Substituting these with market clearing condition (3.11), the profit of FDI is given as:

$$\pi_2^N = [(1 - \alpha) / \alpha](1 + \beta)w^S \times$$

$$[L^S - a^m gm / (m + g)](g^2 + gf + mf) / n[(1 + \beta)^\varepsilon mf + (1 + \beta)gf]$$

(3.21)

As before, in a steady state, the aggregate value of stock in the North is constant. The value of the typical FDI firm also falls at the rate of product development. Since $r^i = \rho, i = N, S$ and free entry into R&D (Eq.(3.7)) in the long-run, it turns out that no-arbitrage condition of FDI firms (Eq.(3.9b)) becomes:

$$\pi_2^N = (\rho + g + m)w^N a^N / n \quad (3.22)$$

To get the steady state condition for the typical FDI firm, equate (3.21) and (3.22), which yields:

$$\begin{aligned} \rho + g + m &= [(1 - \alpha) / \alpha][(1 + \beta)w^S / w^N] \times \\ &[L^S / a^N - a^m mg / a^N (m + g)] \times \\ &(g^2 + gf + mf) / [(1 + \beta)^\varepsilon mf + (1 + \beta)gf] \end{aligned} \quad (3.23)$$

Since

$$L^N / a^N - g = [L^S / a^N - a^m mg / a^N (m + g)](w^S / w^N)^\varepsilon g^2 / [mf + (1 + \beta)^{1-\varepsilon} gf]$$

from (3.10) & (3.11), the steady state condition for the typical FDI form, Eq.(3.23), can be further written as:

$$\begin{aligned} \rho + g + m &= [(1 - \alpha) / \alpha](L^N / a^N - g)^{1-\varepsilon} \times \\ &[L^S / a^N - a^m mg / a^N (m + g)]^{1-\varepsilon} [(1 + \beta)^\varepsilon mf + (1 + \beta)gf]^{1-\varepsilon-1} \times \\ &[(g^2 + gf + mf) / g^{2-\varepsilon}] \end{aligned} \quad (3.24)$$

Equation (3.24) describes the relationship among the long-run growth rate, the rate of imitation and the rate of FDI for the typical FDI firm in a steady state.

3.3.3 The Southern Firm

From pricing conditions (5c) and (6c), the profit of Southern firms can be written as: $\pi^S = [(1 - \alpha) / \alpha] w^S x^S$. As before, since $x^S : x_1^N : x_2^N \equiv (p^S)^{-\varepsilon} : (p_1^N)^{-\varepsilon} : (p_2^N)^{-\varepsilon}$ from (3.3), (3.5c) and (3.6c), we have $x_2^N = (1 + \beta)^{-\varepsilon} x^S$. Substituting these with market clearing condition (3.11), the profit of Southern firms is given as:

$$\pi^S = [(1 - \alpha) / \alpha] w^S \times$$

$$[L^S - a^m g m / (m + g)] (g^2 + g f + m f) / n [m f + (1 + \beta)^{1-\varepsilon} g f]$$

(3.25)

In a steady state, the aggregate value of stock value in the South is also constant. The value of the typical firm also falls at the rate $g^S = g$. Since $r^i = \rho$, $i = N, S$ and free entry into R&D (Eq.(3.8)) in the long-run, it turns out that no-arbitrage condition of the typical Southern firm (Eq.(3.9c)) becomes:

$$\pi^S = (\rho + g)w^S a^m (g^2 + gf + mf) / n(gf + mf) \quad (3.26)$$

The steady state condition for the typical Southern firm is given by equating (3.25) and (3.26), which yields:

$$(\rho + g)/(m + g) = [(1 - \alpha)/\alpha][L^S / a^m - gm/(m + g)]/[m + (1 + \beta)^{1-\varepsilon} g] \quad (3.27)$$

Equation (3.27) describes the relationship between the long-run growth rate and the rate of imitation in a steady state for the typical Southern firm. Noticeably, the rate of FDI does not enter this equation.

The steady state equilibrium has to satisfy the system of three equation, i.e., Eq.(3.20), (3.24), and (3.27) simultaneously. In other word, the steady state equilibrium equations are: Eq.(3.20), (3.24) and (3.27):

$$\rho + g = [(1 - \alpha)/\alpha][(L^N / a^N) - g](g^2 + gf + mf) / g^2 \quad (3.20)$$

$$\rho + g + m = [(1 - \alpha) / \alpha] (L^N / a^N - g)^{1-\varepsilon} \times$$

$$[L^S / a^N - a^m m g / a^N (m + g)]^{1-\varepsilon} [(1 + \beta)^\varepsilon m f + (1 + \beta) g f]^{1-\varepsilon-1} \times$$

$$[(g^2 + g f + m f) / g^{2/\varepsilon}] \tag{3.24}$$

$$(\rho + g) / (m + g) = [(1 - \alpha) / \alpha] [L^S / a^m - g m / (m + g)] / [m + (1 + \beta)^{1-\varepsilon} g]$$

$$\tag{3.27}$$

3.4 Relative Wage Rates

Relative wage rates are simultaneously determined in the model in the steady state. We have assumed that wages in the South must be low enough so that FDI firms find it profitable to produce in the South. Moreover, in our model (a wide-gap case), the additionally marginal production cost of FDI firms must be high enough ($1+\beta > 1/\alpha$) so that firms in the South can set monopoly prices without fear of competition from FDI firms. Only with these constraints can the effects of the determinants of relative wages be examined.

We start with the ratio of the outputs of a typical producer in the South and the North given by using equation (3.3):

$$\begin{aligned} x^S / x_1^N &= (p^S / p_1^N)^{-\varepsilon} \\ &= (w^S / w^N)^{-\varepsilon} \end{aligned} \tag{3.28}$$

When the wage rate in the South is lower than in the North, Southern producers can charge a lower fixed mark-up over unit cost. The output of a typical producer in the South is greater than the North. Hence the ratio of the output of a typical producer in the South over the North is greater than 1.

The ratio of the output of a typical producer in the South over the North can also be given by the market clearing condition (3.10) and (3.11) as:

$$x^S / x_1^N = [L^S - a^m gm / (m + g) - n_2^N x_2^N] n_1^N / n^S (L^N - a^N g) \quad (3.29)$$

By substituting equations (3.15), (3.16) and (3.17) and $x_2^N = (1 + \beta)^{-\varepsilon} x^S$ into equation (3.29), we get:

$$x^S / x_1^N = [L^S - a^m gm / (m + g)] g^2 / [mf + (1 + \beta)^{1-\varepsilon} gf] (L^N - a^N g) \quad (3.30)$$

Hence, relative wages are given by equating equations (3.28) and (3.30) as:

$$\begin{aligned} \omega^\varepsilon &= (w^S / w^N)^\varepsilon \\ &= (L^N - a^N g) [mf + (1 + \beta)^{1-\varepsilon} gf] / g^2 [L^S - a^m mg / (m + g)] \end{aligned} \quad (3.31)$$

Substituting Eq.(3.20) and (3.27) into (3.31), we have

$$\omega^\varepsilon = (a^N/a^m) \times f(m+g)/(g^2 + gf + mf) \quad (3.32)$$

Equation (3.32) provides us an alternative measurement to calculate the value of relative wages. In (3.32), we see that relative wage rate is proportional to the relative cost of innovation to imitation, (a^N/a^m) , and the term of $f(m+g)/(g^2 + gf + mf)$, which consists of the rate of growth, the rate of imitation and the rate of FDI.

Noticeably, from Eq.(3.16) and (3.17), we see that, $f(m+g)/(g^2 + gf + mf)$ is exactly equal to $\lambda_2^N + \lambda^S$, the market share of product made in the South. Therefore, we can conclude that if the relative market share of the South to the North is increasing, which means an increasing share of the product being produced in the South, the condition of South labour is improving.

Substituting (3.16) and (3.17) into (3.32), we get,

$$\omega^\varepsilon = (a^N/a^m) \times (\lambda_2^N + \lambda^S) = (a^N/n)/(a^m/(n^S + n_2^N)) \quad (3.33)$$

a^N/n is the unit of labour that is needed to develop a new variety, whereas $a^m/(n^S + n_2^N)$ is the unit of labour needed to imitate a variety. Since a^N and a^m are constant, when the market share of product made in the South increases, it means that it is relatively easier for the South to successfully imitate a variety or vice-versa. When a country has a relatively better capacity of doing innovation/imitation than it had before, it has improved the relative condition of workers. This can happen in the South when a government policy is used to lure more Foreign Direct Investment into the South, without substituting the South production, to increase the accumulation of the knowledge in the South and improve the relative wage between the South and the North.

3.5 Numerical Calibrations and Policy Implications

3.5.1 Calibrations and Policy Implication for Steady-State Equilibrium

To illustrate further the steady state equilibrium for the system, we can substitute different values for the systematic parameters. These parameters are: the cost of imitation in the South, a^m , the cost of innovation in the North a^N , the population of the North and the South, L^N and L^S , the additional marginal cost of production that FDI firms have to pay, β , the global interest rate, ρ , and α , which determines the elasticity of substitution between any two products, $\varepsilon = 1/(1 - \alpha)$.

Table 3.1 contains different values of the rate of growth, the rate of imitation and the rate of FDI corresponding to the changes in each systematic parameter respectively, given the other variables constant. For comparison purpose, the base case has been set as: $a^m=3$, $a^N=5$, $L^N=15$, $L^S=3$, $\beta=1.2$, $\rho=0.05$, and $\alpha=0.5$. With these parameters in the base case, the steady state rates are gives as follows:

$$g = 1.5540, \quad m = 0.1951, \quad f = 0.1509$$

Table 3.1: Calibrations for Steady-State Equilibrium

Parameters	a^m	L^s	a^N	L^N	α	β	ρ	g	m	f
Base Case	3	3	5	15	0.5	1.2	0.05	1.5540	0.1951	0.1509
$a^m \downarrow$	2	-	-	-	-	-	-	1.5038	0.7663	0.0383
$L^s \uparrow$	-	6	-	-	-	-	-	1.4946	1.8666	0.0066
$a^N \downarrow$	-	-	4	-	-	-	-	2.0024	0.0440	0.3416
$L^N \uparrow$	-	-	-	20	-	-	-	2.1072	0.0126	0.2925
$\alpha \uparrow$	-	-	-	-	0.67	-	-	0.9944	0.2713	0.0324
$\beta \downarrow$	-	-	-	-	-	1.1	-	1.5654	0.1656	0.1784
$\rho \uparrow$	-	-	-	-	-	-	0.08	1.5407	0.1877	0.1519

a^m , Cost of Imitation in the South

Holding the other variables constant as in the base case, when a^m changes from 3 to 2, that is, the cost of imitation in the South goes down from 3 to 2, g goes down to 1.5038, f also decreases to 0.0383, while m rises up to 0.7663. This implies that if it is easier for Southern firms to imitate, although the profit of Southern firms from Eq.(3.25) will increase in the short run, the growth rate will eventually be lower due to the lower profit for innovation. The rate of foreign direct investment will also slow down because there is a faster rate of imitation.

Governments in developing countries might intend to encourage local accumulation of knowledge by promoting learning process through R&D subsidy. For example, through a subsidy in the South, it reduces the cost of imitation. Another example is an easing of patent enforcement

policy. The latter can easily happen especially in the countries where intellectual property rights are not well protected. The consequence of such policy in the South is that, although the imitation rate has increased after the deduction of imitation cost, fewer foreign firms will be willing to enter the South. Therefore there are less opportunities for the Southern firms to learn advanced technology. Lower long-run growth rate indicates that this sort of intervention by Southern government is not beneficial to either the North or the South.

L^s , Population of the South

When L^s goes up from 3 to 6, as we hold the other variables constant, g goes down to 1.4946, f also goes down to 0.0066, while m rises up to 1.8666. An expansion in the size of Southern population directly affects the market clearing conditions, hence it affects the steady state equilibrium. When the labour force in the South expands, the cost of labour in the South decreases, more resources are then devoted to imitation (Eq.(3.11)), which increases the rate of imitation. It is therefore more likely that more Southern firms will imitate successfully and take over the monopoly profits of foreign investors (see Eq.(3.25)). Finally it reduces the rate of FDI and the rate of innovation because of lower profits, and eventually, it also reduces the rate of growth.

a^N , Cost of Innovation in the North

When a^N decreases from 5 to 4, holding the other variables constant as in the base case, g increases to 2.0024, and f also increases to 0.3416,

while m decreases to 0.0440. In other word, contrary to the effects of the decrease in a^m , a decrease in a^N can result in a higher growth rate, a higher rate of FDI and a lower rate of imitation.

When the cost of innovation decreases, more varieties of products are invented in the North. More firms in the North will then take advantages of localisation and internationalisation by utilising cheaper production factors in the South. This eventually boosts the formation of multinational enterprises. This enhances the steady state growth rate. When more firms compete for the resource in the South, less resource will be devoted to the imitating activities which takes place in the South, the rate of imitation therefore goes down in the steady state. Therefore, the policy in the North that enables it to reduce the cost of innovation will eventually benefit both the South and the North.

L^N , Population of the North

The opposite results of expanding the labour of the South apply to an expansion of the size of labour in the North. As we hold the other variables fixed, when L^N rises from 15 to 20, g goes up from 1.5540 to 2.1072, and f goes up from 0.1509 to 0.2925, while m goes down from 0.1951 to 0.0126.

When the labour resource in the North expands, the innovative activities will be promoted since more labour will be devoted to R&D in the North. As a result, more varieties of products are generated, which enhance the growth rate of the North. The booming in innovation in the North

encourages more firms to establish multi-nationalisation to take advantage of cheaper production cost abroad. The rate of FDI is therefore increased, which increase the opportunity for the South to imitate. Although the rate of imitation declines due to the higher number of FDI firms being introduced into the South, the growth rate of the South increases in the steady state. Therefore, the expansion of labour in the North benefits both the North and the South.

$\varepsilon = 1/(1 - \alpha)$, Elasticity of Substitution

The effect of a change in α from 1/2 to 2/3 results in a decrease in both g and f , from 1.5540 to 0.9944 and from 0.1509 to 0.0324 respectively. The rate of imitation however, increases from 0.1951 to 0.2713.

An increase in g''' implies a higher elasticity of substitution between any two products, which also means a higher degree of specialisation in production but lower share of number of products for each firm. The profit of each Northern or Southern firm therefore decreases and that discourages the innovation in the North as well as the imitation in the South and formation of FDI (see Eq.(3.6a), Eq.(3.6b) and Eq.(3.6c)). In the long run, the rate of growth and the rate of FDI decrease. However, the rate of imitation increases, which is due to a greater decrease in the number of multinational firm which eventually outnumbers the decrease in the number of successful imitation.

β , Additional Marginal Cost of Production That FDI Firms Have to Pay

Now suppose β decreases, which means the additional cost of production that a FDI firm has to pay to produce in the South is smaller. From the calibration, we see that, when β decreases from 1.2 to 1.1, given the other parameters, g increases from 1.5540 to 1.5654, and f also increases from 0.1509 to 0.1784, while m decreases from 0.1951 to 0.1656.

It is not surprising to see that a cheaper additional cost of establishing subsidiaries for Northern firms will encourage the formation of multinational enterprises. More firms in the North are willing to take up the risk of being imitated to produce in the South, because the unit production cost is actually cheaper. The profits for a successful innovation are higher once its manufacturing is taking place in the South. This stimulates the rate of innovation in the North, therefore the rate of FDI also increases and so does the long run growth rate. The rate of imitation declines because many more foreign firms are entering the South. However, this does not mean that the imitating activities are slowing down. On the contrary, because the long run growth rate is eventually increased, it implies that more firms in the South will successfully imitate the existing products that are invented in the North.

It is therefore beneficial for the government in the South to eliminate the obstacles for the North to produce in the South. For example, the corruption of bureaucrats in the South may cause high additional cost

for the North to invest in the South, which often happens in the developing countries. The policy to remove such additional cost for foreign investors is beneficial not only to the Northern firms but also to the South, and it is therefore desirable for the developing country.

ρ , Global Interest Rate

When we hold the other variables constant as in the base case, an increase from 0.05 to 0.08 in ρ , the global interest rate, results in a decrease in g , from 1.5540 to 1.5407, and in m , from 0.1951 to 0.1877 respectively. However, it also increases f , from 0.1509 to 0.1519.

The reason for such effects is that an increase in the interest rate raises the real (opportunity) cost of capital, which is the cost of innovation in the North or the cost of imitation in the South (see Eq.(3.9a), and Eq.(3.9c)). Higher interest rate therefore discourages Northern firms to conduct innovation activities and Southern firms to conduct imitating activities. The rate of innovation in the North eventually slows down, so does the rate of long run growth rate, and the rate of imitation in the South also declines. However, the advantage of utilising cheaper resources becomes more important for Northern firms in order to increase the profit margin. As a result, it increases the rate of FDI. The result also reveals that, when the rate of FDI increases, it does not necessarily improve the rate of growth for the South. It is very important for developing countries to see clearly what is the real factor that causes the rate of FDI to boom.

3.5.2 Calibrations and Policy Implication for Relative Wage Rates

Table 3.2 shows the effects of a change in each variable on relative wages. The base case uses the same values as in the previous section, which gives relative wages the value of 0.4052. However, since FDI firms face an additional marginal cost of βw^S per unit of production, the wage in the South may be so high that FDI does not occur at all. To make FDI happen, the relative wages must be lower than $1/(1 + \beta)$, which equals 0.4545 when β equals 1.2.

Table 3.2: Calibrations for Relative Wages

	g	m	f	$f(m+g)/(g^2+gf+mf)$	$(a^N/a^m) \times f(m+g)/(g^2+gf+mf)$	Relative Wages (w^S/w^N)
Base Case	1.5540	0.1951	0.1509	0.0985	0.1642	0.4052
$a^m \downarrow: (= 2)$	1.5038	0.7663	0.0383	0.0370	0.0926	0.3042
$L^S \uparrow: (= 6)$	1.4946	1.8666	0.0066	0.0098	0.0164	0.1280
$a^N \downarrow: (= 4)$	2.0024	0.0440	0.3416	0.1485	0.1979	0.4449
$L^N \uparrow: (= 20)$	2.1072	0.0126	0.2925	0.1225	0.2042	0.4519
$\alpha \uparrow: (= 2/3)$	0.9944	0.2713	0.0324	0.0398	0.0664	0.2576
$\beta \downarrow: (= 1.1)$	1.5654	0.1656	0.1784	0.1119	0.1865	0.4319
$\rho \uparrow: (= 0.08)$	1.5407	0.1877	0.1519	0.0996	0.1660	0.4074

The change in population (L^N & L^S)

From (3.31) we see that there are three channels through which any change in population size can affect relative wages. First, on the supply side, there is the direct effect of the change in the relative supplies of the two types of labour. For example, an increase in L^N tends to increase the relative wage of the South.

Secondly, changes in the demands for labour in the research sectors in the two economies. When the rate of innovative activity in the North increases by dg , labour demand in the North expands by $a^N \times dg$, while in the South, it increases by $a^m \times (dm \times dg)/(dm + dg)$ ^{3.1}.

Finally, there is an effect that comes about due to the changes in the relative numbers of products manufacturing in each region. The market shares in the total number of differentiated products of these three different type of producers (that is, Southern, multinational and Northern brand) are λ_1^N , λ_2^N , and λ^S . Therefore, the share of demand for the labour of each type of production is $\lambda_1^N x_1^N$, $\lambda_2^N x_2^N (1 + \beta)$, and $\lambda^S x^S$ respectively^{3.2}. Hence, the relative demand for labour in manufacturing sector in the South to the North is $(w^S)^{-\varepsilon} f[m + (1 + \beta)^{1-\varepsilon} g] / g^2 (w^N)^{-\varepsilon}$.

^{3.1} R&D in the North requires $a^N \times \dot{n}/n = a^N g$ in the steady state. R&D in the South in the steady state needs $a^m \dot{n}^S / (n^S + n_2^N) = a^m g m / (m + g)$ (see market clearing condition Eq.(3.11))

^{3.2} Since one unit of product x_2^N requires $(1 + \beta)$ units of labour, the total amount of labour demanded by multinational firms is $(1 + \beta) n_2^N x_2^N$. The shares of each type of products are given by Eq.(3.15), (3.16) and (3.17).

These three channels of effect can be summed up in Eq.(3.32), in which, relative wage rates can be shown as the product of the constant term, a^N / a^m , and the market share of product produced in the South.

As a result of labour supply in the North changing from 15 to 20, with the constant term of a^N / a^m remaining unchanged, the market share of product produced in the South increases from 0.0985 to 0.1225. The relative wage increases from 0.4052 to 0.4519 accordingly. Whereas in the case of changing South labour supply from 3 to 6, the market shares of product made in the South has decreased from 0.0985 to 0.0098, and the relative wage rate has also decreased from 0.4052 to 0.1280 accordingly.

Changes in Cost of Innovative Activities; Innovation (a^N) or Imitation (a^m)

If the cost of innovation is lowered, given other conditions unchanged, Northern firms will be more capable of making a successful innovation. It is straightforward that more firms in the North will take advantage of localisation and internationalisation by utilising cheaper production factors in the South. Therefore, it eventually boosts the formation of multinational enterprises. This enhances the steady state growth rate. When more firms compete for the resources in the South, less resources will be devoted to imitating activities in the South, the rate of imitation therefore goes down in the steady state. The effects again,

can be summed up in Eq.(3.33) in terms of relative units of labour needed to develop a new variety and to imitate a variety.

From Table 3.2, we see that if the cost of imitation in the South goes down from 3 to 2, the ratio of the amount of labour needed to develop a new variety to that needed to imitate also goes down from 0.1642 to 0.0926^{3.3}. As a result, the relative wage rate goes down from 0.4052 to 0.3042 accordingly.

If a^N decreases from 5 to 4, holding the other parameters constant as in the base case, g increases to 2.0024, and f also increases to 0.3416, whereas m decreases to 0.0440. As a result, the relative unit of labour needed to develop a new variety and unit of labour needed to imitate goes up from 0.1642 to 0.1979, and the relative wage rate increases from 0.4052 to 0.4449 accordingly.

Changes in $\varepsilon = 1/(1 - \alpha)$, Elasticity of Substitution

As seen in the previous section, the effect of the change in α from 1/2 to 2/3 results in a decrease in both g and f , which changes from 1.5540 to 0.9944 and from 0.1509 to 0.0324 respectively. The rate of imitation, however, has increased from 0.1951 to 0.2713. From Table 3.2, we see that the market share of product produced in the South has decreased from 0.0985 to 0.0398 accordingly. The relative wage rate also decreases from 0.4052 to 0.2576.

^{3.3} Eq.(3.32) = Eq.(3.33)

β , Additional Marginal Cost of Production That FDI Firms Have to Pay

When β decreases, it means the additional cost of production that a FDI firm has to pay to produce in the South is smaller. From the calibrations, we see that when β decreases from 1.2 to 1.1, given the other parameters, g increases from 1.5540 to 1.5654, and f also increases from 0.1509 to 0.1784, while m decreases from 0.1951 to 0.1784. The three variables eventually result in an increase in the market share of the product made in the South, which increases from 0.0985 to 0.1119. As a result, the relative wage rate also goes up from 0.4052 to 0.4319.

ρ , Global Interest Rate

When we hold the other parameters constant as in the base case, an increase from 0.05 to 0.08 in ρ , the global interest rate, results in a decrease in g , from 1.5540 to 1.5407, and in m , from 0.1951 to 0.1877 respectively. However, f also increases from 0.1509 to 0.1519. These changes also push up the market share of product made in the South. Eventually, the relative wage rate goes up from 0.4052 to 0.4074.

3.6 Governmental Subsidy to Encourage Local Accumulation of Knowledge

We now consider the policies that the governments might use to encourage local accumulation of knowledge. The most direct way for a government to achieve such purpose is to subsidise the accumulation of knowledge. For the Southern government, it can be done by governmental sharing of reverse engineering, the adaptation of foreign technologies to the local conditions, and so forth. The policy will encourage imitation by reducing the cost incurred by a Southern firm in imitating existing varieties. As for the Northern government, a research subsidy is rather easy to implement.

3.6.1 The Southern Subsidy to Knowledge Accumulation

Let's start with the South. We denote ϖ^S as a payroll subsidy from the Southern government. With this subsidy in place, the private cost of successfully imitating an existing variety becomes $(1 - \varpi^S)w^S a^m / (n^S + n_2^N)$, which is the amount that a Southern firm's value cannot exceed under the free entry conditions. Eq.(3.8) is therefore rewritten as

$$v^S \leq (1 - \varpi^S)w^S a^m / (n^S + n_2^N), \text{ with equality whenever } (\dot{n}^S + \dot{n}_2^N) > 0, \quad (3.8')$$

where v^S is the value of a typical Southern brand.

Accordingly, substituting Eq.(3.8') into Eq.(3.9c), the no-arbitrage condition in Southern financial market changes to

$$\pi^S = (1 - \varpi^S)(\rho + g)w^S a^m (g^2 + gf + mf) / n(gf + mf) \quad (3.26')$$

However, the policy does not affect the market clearing condition, i.e., Eq.(3.25).

Combining Eq.(3.25) and Eq.(3.26'), we may write Eq.(3.27)

$$(1 - \varpi^S)(\rho + g)/(m + g) = [(1 - \alpha)/\alpha] \times \\ [L^S / a^m - gm/(m + g)]/[m + (1 + \beta)^{1-\varepsilon} g] \quad (3.27')$$

The Steady State Equilibrium now is given as the solution to Eq.(3.20), Eq.(3.24) and Eq.(3.27').

Table 3.3: Calibrations for Relative Wages With Southern Governmental Subsidy of 30%

	g	m	f	$f(m+g)/(g^2+gf+mf)$	$(a^N/a^m) \times f(m+g)/(g^2+gf+mf)$	Relative Wages (W^S/W^N)
Base Case	1.5151	0.4723	0.0623	0.0512	0.0853	0.2921
$a^m \downarrow: (= 2)$	1.4871	1.4142	0.0122	0.0157	0.0392	0.1981
$L^S \uparrow: (= 6)$	1.4800	4.0650	0.0008	0.0020	0.0033	0.0573
$a^N \downarrow: (= 4)$	1.9304	0.3082	0.1472	0.0812	0.1083	0.3291
$L^N \uparrow: (= 20)$	2.0463	0.2711	0.1319	0.0680	0.1134	0.3368
$\alpha \uparrow: (= 2/3)$	0.9819	0.4829	0.0149	0.0222	0.0370	0.1923
$\beta \downarrow: (= 1.1)$	1.5202	0.4475	0.0719	0.0577	0.0961	0.3100
$\rho \uparrow: (= 0.08)$	1.5010	0.4640	0.0627	0.0519	0.0864	0.2940

We recalculate the value for g , m , and f and also the relative wage rate under the scenario of southern governmental payroll subsidy of 30% of South's wage for imitation. The results are shown as in Table 3.3. Compared with Table 3.1 (without governmental subsidy), Table 3.3 shows that growth rate as well as rate of foreign direct investment has reduced in each case, whereas the rate of imitation has been increased. This demonstrates that a governmental subsidy to Southern imitation activity has increased the rate of successful imitation at the cost of reducing the long term growth rate. Since it is less costly for Southern firms to imitate, foreign investing firm will be more hesitant to invest directly in the South.

More strikingly, the relative wage rate of South to the North has been generally reduced as well. The result follows directly from inspecting Eq.(32). As the market share of product made in the South (i.e., the term of $f(m+g)/(g^2 + gf + mf)$) has decreased after the implementation of the policy, the relative wage rate has also decreased in each case.

In contrast to the result in Grossman and Helpman (1992, Ch.11), the result from this study shows that government policies to promote local learning activities do not necessarily improve the relative condition of workers in the policy-active country. With the presence of foreign direct investing firms, the relative wage rate does not solely depend on the demand for Northern labour by the Northern firm or Southern labour by the Southern. Instead, it also depends on the labour demand from foreign direct investing firms, which is also the key determinant of the share of product produced in each country.

3.6.2 The Northern Subsidy to Knowledge Accumulation

Now, let's look at the North. We denote ϖ^N as a payroll subsidy from the Northern government. With this subsidy in place, the private cost of successfully innovating a new variety becomes $(1 - \varpi^N)w^N a^N/n$, which is the amount that the value of a typical Northern firm and Foreign Investing firm cannot exceed under the free entry conditions. Eq.(3.7) is therefore rewritten as

$$v_i^N = v_2^N \leq w^N a^N / n, \text{ with equality whenever } n > 0, \quad (3.7')$$

where v_i^N is the value of a Northern brand that has not been copied.

Accordingly, substituting Eq.(3.7') into Eq.(3.9a) and Eq.(3.9b), the no-arbitrage condition in Northern financial market change to

$$\pi_1^N = (1 - \varpi^N)(\rho + g)w^N a^N / n \quad (3.19')$$

$$\pi_2^N = (1 - \varpi^N)(\rho + g + m)w^N a^N / n \quad (3.22')$$

However, the policy does not affect the market clearing conditions in the North, i.e., Eq.(3.18) and Eq.(3.21).

Combining Eq.(3.18) and (3.19'), and Eq.(3.21) and (3.22'), we have Eq.(3.20) and (3.24) written as:

$$(1 - \varpi^N)(\rho + g) = [(1 - \alpha) / \alpha][(L^N / a^N) - g](g^2 + gf + mf) / g^2 \quad (3.20')$$

$$\begin{aligned}
(1 - \varpi^N)(\rho + g + m) &= [(1 - \alpha)/\alpha][(L^N / a^N - g)^{1/\varepsilon} \times \\
&[L^S / a^N - a^m m g / a^N (m + g)]^{1-1/\varepsilon} [(1 + \beta)^\varepsilon m f + (1 + \beta) g f]^{1/\varepsilon - 1} \times \\
&[(g^2 + g f + m f) / g^{2/\varepsilon}] \quad (3.24')
\end{aligned}$$

The Steady State Equilibrium is now given as the solution to Eq.(3.20'), Eq.(3.24') and Eq.(3.27).

Again, we re-calculate the value for g , m , and f and also the relative wage rate under the scenario of northern governmental payroll subsidy of wage for innovation. The results are shown as in Table 3.4. Comparing with Table 3.1 (without governmental subsidy), Table 3.4 shows that the growth rate as well as the rate of foreign direct investment has increased in each case, whereas the rate of imitation has decreased. This implies that a governmental subsidy on Northern innovative activity has increased the rate of successful innovation with a corresponding decrease in the rate of successful imitation in the South. Since it is less costly for Northern firms to innovate, foreign investing firms will be more willing to invest directly in the South.

Table 3.4: Calibrations for Relative Wages with Northern Governmental Subsidy of 3%

	G	m	f	$f(m+g)/(g^2+gf+mf)$	$(a^N/a^m) \times f(m+g)/(g^2+gf+mf)$	Relative Wages (W^S/W^N)
Base Case	1.5810	0.1848	0.1635	0.1035	0.1726	0.4154
$a^m \downarrow: (= 2)$	1.5288	0.7440	0.0421	0.0393	0.0983	0.3136
$L^S \uparrow: (= 6)$	1.5197	1.7945	0.0076	0.0109	0.0181	0.1345
$a^N \downarrow: (= 4)$	2.0381	0.0332	0.3673	0.1548	0.2064	0.4543
$L^N \uparrow: (= 20)$	2.1436	0.0019	0.3132	0.1276	0.2126	0.4611
$\alpha \uparrow: (= 2/3)$	1.0165	0.2645	0.0351	0.0417	0.0694	0.2635
$\beta \downarrow: (= 1.1)$	1.5930	0.1551	0.1926	0.1171	0.1952	0.4418
$\rho \uparrow: (= 0.08)$	1.5680	0.1776	0.1637	0.1041	0.1736	0.4166

Surprisingly, the relative wage rate of South to the North has generally increased thanks to the Northern subsidy. One of the reasons is that due to the mobility of FDI, the inflow of FDI from the North to the South has changed the relative labour demand for the South and the North. While the long run growth rate increases for both the North and the South due to a Northern innovation subsidy, it helps Southern labour to a sufficient extent that the Northern innovation subsidy eventually results in an increase in the relative wage.

This is also in contrast to what was found in Grossman and Helpman (1992, Ch.11). The result has demonstrated again that the relative condition of workers in the policy-active country may not be increased by the innovation promotion in the policy-taking country.

3.7 Conclusion

For developing countries, FDI provides the opportunity to exploit advanced technology by imitating a new product or a new production process introduced by foreign multinational firms. FDI often acts as a vehicle for developing countries to gear up their speed of development. By the formation of multinational firms, FDI involves not only a transfer of resources but also the extension of control that serves as the essential purpose.

As an economic commodity, technology non-rivalry and partial non-excludability make one user of technology unable to prevent another user from utilising simultaneously the same technology. The partial non-excludability of knowledge suggests that industrial R&D may generate technological spill-overs that apply the knowledge as a public good. These distinctive features of technology enable knowledge to be conveyed simply by investigating a product or inspection of a particular action.

Technological superiority, localisation advantage, internationalisation advantage (for example, technology transfer including management skills) explain why multinational firms prefer to incur the cost of setting up a production facility abroad rather than just sell the blueprints to, or license, a foreign firm.

The paper has developed a systematic model to depict the relationship between a developed economy and a developing economy, by allowing

the link of foreign direct investing activities. It also provides a simulation procedure for solving the steady state conditions for the rate of imitation, the rate of FDI, the rate of growth and relative wage rates and finding the equilibrium.

Taking Grossman and Helpman (1992, Ch.11) as a basic model, we have introduced FDI as a set of additional specific variables, which have been examined within a set of simulations. The revised model has shown that, when a country has a relatively better capacity of doing innovation/imitation then it had before, it has improved the relative condition of workers. This happens in the South when a government policy is used to lure more FDI into the South, without substituting the South's production, to increase the accumulation of the knowledge in the South and improve the relative wage between the South and the North.

With the model incorporating the presence of FDI and continuing to allow innovation/imitation in the North/South, the general findings from this paper are:

- (1) A decrease in the cost of imitation or an increase in the population of the South will cause the long-term growth rate to fall, whereas a decrease in the cost of innovation or an increase in the population of the North will lead to a higher long-term growth rate.
- (2) A lower elasticity of substitution amongst products, or a higher global interest rate will slow down the long term growth rate, whereas a

decrease in the additional marginal cost of production that FDI firms have to pay in the South will lead to a higher long-term growth rate.

- (3) A decrease in the cost of innovation, an increase in the population of the North, a decrease in the additional marginal cost of production that FDI firms have to pay in the South, or a higher global interest rate will all result in higher relative wages of the South to the North, whereas a decrease in the cost of imitation, an increase in the population of the South, or a lower elasticity of substitution among products will result in lower relative wages of the South to the North.
- (4) A subsidy to Southern imitation will result in a lower profitability for the FDI firms, which eventually leads to a lower long-term growth rate, and a lower rate of foreign direct investment, but a higher rate of successful imitation.
- (5) A subsidy to Northern innovation will result in an increase in the rate of successful innovation, which leads to a higher rate of long-term growth rate and a higher rate of direct investment, but a lower rate of imitation.
- (6) A Southern governmental subsidy to imitation activities will lead to a lower relative wage rate of the South to the North. However, the relative wage rate of the South to the North will increase with the presence of a Northern subsidy to innovative activities.
- (7) Governmental policies to promote local learning activities do not necessarily improve the relative condition of labour in the policy-

active country, which is in contrast to the result in Grossman and Helpman (1992, Ch.11). The relative wage rate not only depends on the demand for Northern labour by the Northern firm or Southern labour by the Southern, but also depends on the labour demand from foreign direct investing firm.

For simplicity, the model treats FDI as the only channel through which a developing country imitates more advanced technology. However, developing countries may also imitate without the existence of FDI, as has been described in Grossman and Helpman (1992, Ch.11).

The developing world can be segmented into three groups; the first group does not imitate even when there is FDI due to the lacking of the training required to prepare the labour force to work with new technologies. The second group does have the basic required training but is still less developed and can imitate foreign technologies only from FDI. The third group has the basic required training and can imitate even without the existence of FDI. While the model has the limitation in the implication that applies only to the second group that relies on FDI solely, Glass and Saggi (1999) further distinguish the effect of FDI on international technology transfer between the second and the third groups.

Further investigation therefore can be done to dismantle the factors that determine cost of imitation or innovation. For example, it might be interesting to explore the effects of FDI on the level of human capital.

FDI is a vehicle for the adoption of new technologies, and therefore the training required to equip the labour force in developing countries to work with new technologies deserves more attention.

Chapter 4

The Effect of Technology Spill-over from Foreign Direct Investment in Taiwan

4.1 Introduction

So far, what we have done is to examine three theoretical economic models relating to the transfer of innovations from developed to developing countries as a part of general economic growth theory. We have been able to demonstrate some useful advances in these three theories.

Ideally, the next stage would be to empirically test these modelling advances. Regrettably both the mathematical and data requirements for these are fairly advanced and need further research. Nevertheless, examining the effects of FDI in particular upon the growth of a developing country's economy is possible by using a development of a model put forwarded by Barro and Sala-i-Martin (1995). For this purpose, we will use the Taiwanese economy (1953-1995) as the empirical case study.

While the theory of the relationship between FDI and growth has been intensely debated, the precise nature of the relationship for FDI to promote growth remains empirically unexplored. There is little empirical

analysis of the impact of FDI on growth in general. Much of the recent literature has addressed the impact of exports or domestic capital investment on growth (see for example Lee, Rana and Iwasaki (1986), Tsai (1991), Husain and Jun (1992), Fry (1993), Young (1991, 1994) and Balasubramanyam, Salisu and Sapsford (1996, 1999)), but little attention is paid to FDI and growth.

In Fry (1993), FDI indicated by the ratio of FDI to domestic investment was found insignificant in affecting the rate of economic growth for South Asia (Bangladesh, Pakistan, India and Sri Lanka). However, the average FDI ratio over the preceding five years for the ratio of FDI to domestic investment was found to be associated with higher economic growth. This might also reflect lagged effects and other externalities from FDI on current total factor productivity growth.

On the other hand, Lee, Rana, and Iwasaki (1986) estimate a simultaneous equation model of saving and growth for Asia developing countries and find that FDI has a greater positive impact on economic growth than the various capital inflow components included in their growth rate equation. They also find that FDI increases total factor productivity. Husain and Jun (1992) also found a significantly positive effect of FDI on the rate of growth for four ASEAN countries (Indonesia, Malaysia, the Philippines, and Thailand).

Using panel data, Young (1991) found that with similarities as well as differences in their economic development in 19600-1985, Hong Kong

and Singapore have revealed very different stories of success. In particular, Singapore with high capital accumulation benefited much less in TFP growth than Hong Kong, which had a much lower capital accumulation.

Using Summers & Heston (1990) and OECD data sets, Young (1994) finds that: (i) Although output per capita growth in East Asian NIEs during the 1960-1985 was truly remarkable, their growth output per worker turned out to be less significantly high. (ii) In terms of TFP growth, these economies, except Hong Kong, were not significantly different from other economies in the world. (iii). With the exception of South Korea, productivity growth in the NIEs' manufacturing sector was not extraordinarily high either. (iv). In general, rapid factor accumulation would explain the NIEs share of the East Asia growth miracle, both in the aggregate economy and in the manufacturing sector.

Recent developments in growth theory provide a convenient framework within which to analyse the relationship between FDI and growth through, for example, knowledge spill-over, human capital, or externalities inherent in R&D. Balasubramanyam, Salisu and Sapsford (1996) investigated the role which FDI plays in the growth process in the context of developing countries and found that the growth enhancing effects of FDI are strong in countries which pursue an "export promoting" policy than in those following an "Import substituting" one. Using cross-section data, Balasubramanyam, Salisu and Sapsford (1999) found that the presence of FDI appears to interact significantly

with trade policy adopted in the host countries, and the exist of an adequate domestic market. As for the causality of FDI and GDP, Tsai (1991), by using time-series data of Taiwan, found that Taiwan's extraordinary economic performance in 1970s and 1980s was not a significant determinant of FDI.

Empirical studies have pointed out that there is a large proportion of GDP growth that can not be accounted for by merely an increase in labour and capital (Maddison (1970); Kuo (1983); Nelson (1974); Spencer and Woroniak (1970)). Many studies have also shown that improved efficiency can contribute more to economic growth than the accumulation of primary resources in a country (Solow (1957); Denison (1967)). Endogenous growth theory for the past decade has been trying to explain the links between the unexplained part of GDP growth and the contribution of technological efficiency improvement.

Many empirical studies therefore have been done to test models of endogenous growth theory. However, there have not been many empirical tests of the hypothesis that FDI is an engine of technology development, and hence an engine of economic growth.

Theoretically speaking for an open economy, especially for a newly developing country, new technology may be more easily acquired from abroad by imitation, free goods or licensing than internally by self-development (for example, R&D). This does not include technology from intentional Foreign Direct Investment (FDI), which is made by

multinational companies from developed economies. FDI can provide not only the sources of additional capital that can alleviate the capital shortages of less developed countries but also the advanced technology that is often far beyond the innovative ability of less developed countries.

Taiwan, which has been regarded as one of the fastest developing countries in Asia, has established what some regard as a relatively more advanced hi-tech industry when compared with other newly developing countries like South Korea and Singapore. Besides, Taiwan has also adapted a favourable industrial policy to attract FDI. It is therefore a suitable model for us to investigate the possibility that FDI has been helpful in fostering technology development in a newly developing country.

Initial FDI investment in Taiwan did not account for a large portion in overall capital formation; for example, FDI in Taiwan only accounted for 1.37 to 4.32 percent of Taiwan's total capital formation during the period of 1965-1986. However, the GDP generated by foreign firms in Taiwan has played an important role in the overall GDP. For instance, foreign firms in 1979 generated 8.34 percent of Taiwan's total GNP (see Schive (1990)). Schive (1990) pointed out that, although FDI had not made a significant contribution to Taiwan's total capital, the contribution made to GNP by foreign firms was greater than what was expected. For example, a total of 795 foreign firms contributed 8.34% of Taiwan's total GNP in 1979, while the FDI as a percentage of domestic capital formation during 1977-1980 was only 1.37%.

The purpose of this chapter is to further investigate the relationship between Taiwan's GDP growth and its FDI by performing regressions with time series econometric techniques. The investigation has been done for the overall economy as well as for manufacturing industry alone. A modified endogenous growth model has served as the theoretical foundation for the empirical testing.

The chapter is divided into the following sections. Section 4.2 reviews the trend of FDI in Taiwan for years 1953-1995. The ratios of the FDI to GDP and domestic capital formation are also presented. Since FDI in manufacturing industry has been always important in Taiwan, the ratios of FDI to GDP and domestic capital formation in manufacturing industry are also considered.

Section 4.3 presents the model in endogenous growth theory that serves as the theoretical foundation for the empirical framework. This empirical model is also developed further in this section, which is then used to test the hypothesis regarding FDI's role for GDP growth in Taiwan.

The results of the empirical testing are presented in section 4.4. A time series regression model has been tested using ordinary least square (OLS) technique. The tests have been done for both countrywide and manufacturing industry data.

The conclusion is then presented in section 4.5.

4.2 The Model

4.2.1 FDI and The Model of Learning-By-Doing and Knowledge Spillover

Barro and Sala-i-Martin (1995, Chapter 4) follow Romer (1986) and Arrow's (1962) ideas on eliminating the tendency for diminishing returns by assuming that knowledge creation is a product of investment. There are two key assumptions in their model. First, learning-by-doing works through each firm's investment. This idea reflects Arrow's idea that knowledge and productivity are gained from investment and production. Second, each firm's knowledge is a public good that any other firm can access at zero cost.

We have a similar idea and assume that learning-by-doing by local firms of developing countries for more advanced technology only happens when foreign firms invest in the developing countries and bring in their advanced technology.

Suppose the production function is a function of labour augmenting technology:

$$Y = F(K, \bar{A}L) \tag{4.1}$$

where \bar{A} is the index of knowledge available in the economy.

The first assumption allows an increase in a foreign firm's capital stock to lead to a parallel increase in its stock of knowledge, \bar{A} . The second assumption implies that the change in each firm's technology term corresponds to the economy's overall learning and is therefore proportional to the change in the aggregate foreign capital stock.

However, instead of replacing \bar{A} by K , the overall capital, we assume that the knowledge spill-over is only the by-product of introducing foreign direct investment into the economy. Local firms learn advanced technology from firms of foreign direct investment through learning by the doing process or imitation.

Here we introduce the FDI factor by replacing \bar{A} with K_F , where K_F is the year-to-date accumulated amount of foreign direct investment. Therefore, the production function can be assumed as:

$$Y = F(L, K, K_F) = AK^\alpha L^\beta + AK_D^\alpha L_D^\beta K_F^\gamma \quad (4.2)$$

Where A is the level of technology, K is the stock of physical capital, which includes the stock of domestic capital K_D , and the stock of foreign capital K_F . L is labour, which includes the labour of domestic firms L_D and foreign firms L_F . Without the presence of K_F , the production function takes the simple Cobb-Douglas form: $Y = AK^\alpha L^\beta$,

Since foreign firms invest K_F , and bring advanced technology to the economy, it results in additional output $AK_D^\alpha L_D^\beta K_F^\gamma$ generated by the local learning-by-doing or imitation process.

Moreover, if FDI is very small compared to the total investment in the economy (as is L_F compared to L_D), true in the case of Taiwan, then it can be neglected with the appearance of K_D , therefore $K_D \cong K$ (and $L_D = L$). The production function can then be simplified as:

$$Y = AK_D^\alpha L^\beta (1 + K_F^\gamma) \quad (4.3)$$

where the amount of foreign direct investment is much bigger than 1.

The equation can be further simplified to:

$$Y = AK_D^\alpha L^\beta K_F^\gamma \quad (4.4)$$

If $\gamma > 0$, there is a spill-over effect.

4.2.2 A Time Series Study

To conduct the regression, logarithms provide a simple regression function as:

$$\text{Log}Y = \text{Log}A + \alpha\text{Log}K_D + \beta\text{Log}L + \gamma\text{Log}K_F \quad (4.5)$$

The first difference between the logarithm provides the relationship of the dependent variable and the independent variables:

$$D\text{Log}Y = D\text{Log}A + \alpha D\text{Log}K_D + \beta D\text{Log}L + \gamma D\text{Log}K_F \quad (4.6)$$

Equation (4.6) explains the growth rate of GDP in terms of the sum of the growth rates of Domestic Capital (K_D), Employment (L), and Foreign Direct Investment (K_F). We use equation (4.6) to test the hypothesis that: cumulative knowledge, which is the result of cumulative Foreign Direct Investment, helps to stimulate the growth rate of GDP in Taiwan. That is, γ in equation (4.6) is significantly different from zero.

4.2.3 Measuring Physical Capital

Since there is no available data for the “machine hours” used in the production process during period t , we simply assume that the flow of service is proportional to the stock of physical capital.

The stock of capital input is measured using the perpetual inventory method with geometric depreciation. The stock of physical capital comes from the accumulation of the figures on gross physical investment along with estimates of depreciation of existing stocks. The perpetual-inventory method turns the relationship to:

$$K(t + 1) = K(t) + I(t) - \delta K(t) \quad (4.7)$$

where $K(t)$ is the stock of physical capital at time t , $I(t)$ is the flow of gross investment during period t , and δ is the constant depreciation rate.

4.2.4 The Initial Stock of Capital

One way to measure $K(0)$ is to make a rough guess, and then use Eq.(4.7) to calculate $K(t)$ in the subsequent years. However, the estimated stocks of capital during the first year are sensitive to the initial guess about $K(0)$ and therefore unreliable, although as $K(0)$ is

depreciated away, the estimated stocks become progressively more accurate.

Here I adopt another method to estimate $K(0)$. Assume that the economy is in a steady state, so the equation is true that,

$$\frac{\Delta K(0)}{\Delta Y(0)} = \frac{K(0)}{Y(0)},$$

i.e.,

$$K(0) = \frac{\Delta K(0)}{\Delta Y(0)} \times Y(0) \quad (4.8)$$

While $K(0)$ turns out to be the marginal capital/output ratio times the output of the initial year.

4.3 FDI & GDP Growth in Taiwan (for All Industries and for Manufacturing Level)

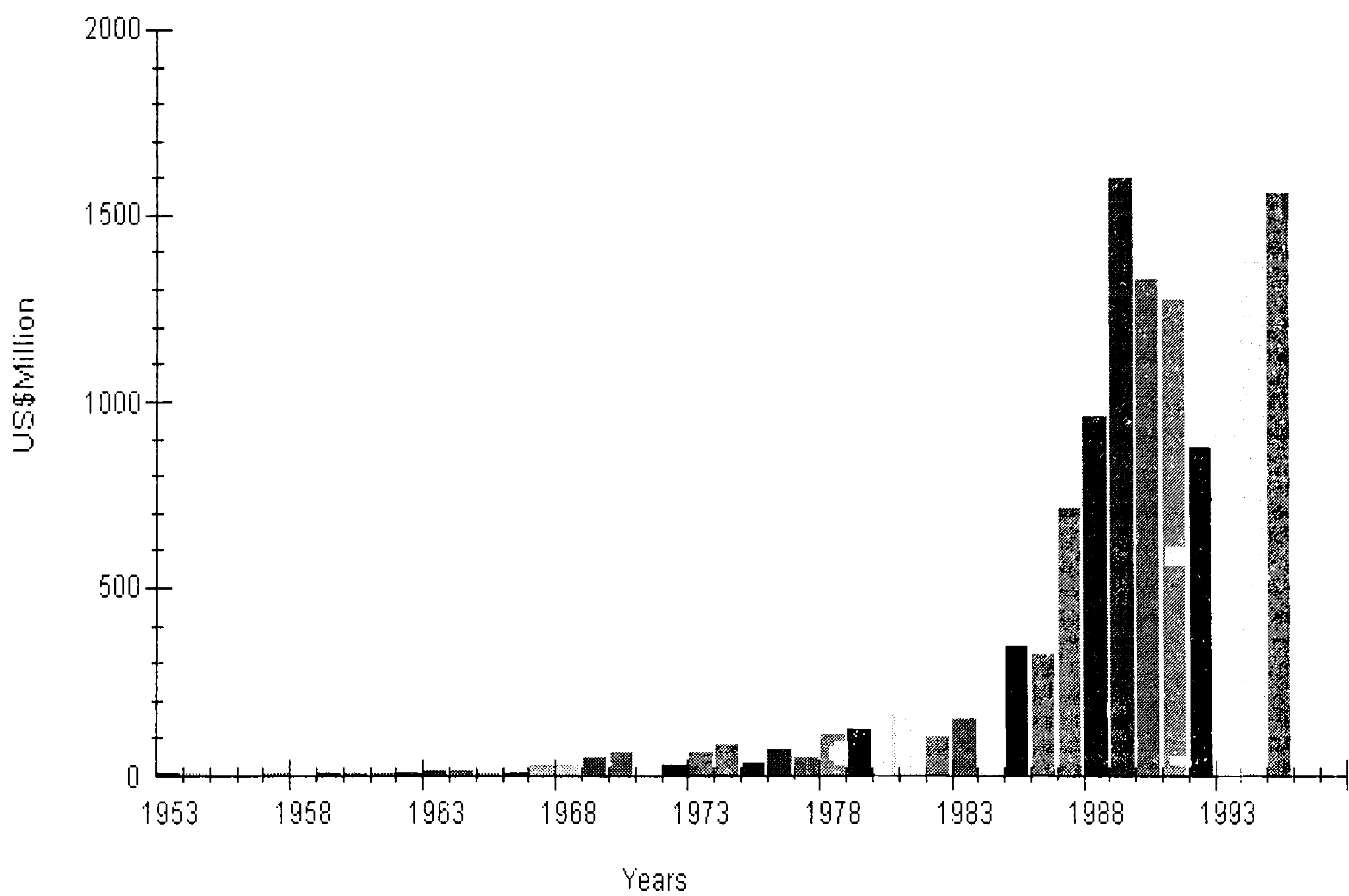
4.3.1 The Trend of FDI into Taiwan

The Taiwanese government, which moved from China to Taiwan in 1949, started to attract foreign capital in order to resolve its difficulties in accumulating sufficient saving and foreign exchange to support its domestic investment. The government promulgated the "Statute for Investment by Foreign Nationals" in 1954, and the "Statute for Investment by Overseas Chinese" in the next year. As a result, foreigners and overseas Chinese were permitted to invest in Taiwan and transmit profits and interests or repatriate annually 15 percent of their capital value commencing two years after the completion of their projects.

The flow of FDI into Taiwan has grown steadily over the past three decades, except for the year 1972, 1975 and 1981-1982. However, only a limited amount of FDI arrived Taiwan before 1960 due to the strict regulations and the uncertain political status of the island. The inflow of FDI in the 1960s grew substantially, following the promulgation of the "Statue for the Encouragement of Investment" in 1960. The Statute also offered a comprehensive incentive package to foreign investors. These created a good investment climate and brought in a larger amount of foreign capital.

However, in the earlier 1960s, most FDI inflows were located in the import-substituting light manufacturing industries, such as food, textiles and garments. After 1964, Taiwan attracted relatively more export-oriented FDI due to the establishment of export processing zones. Most of the FDI in this period was directed towards the labour-intensive manufacturing industries, such as electronics, which served the economy's export-oriented development policy.

Figure 4.1: Arrived FDI Flow into Taiwan, 1953-1995



Source: Taiwan Statistical Data Book, Council for Economic Planning and Development, 1996. Central Bank of China, Balance of Payments, various issues.

In the 1970s, apart from 1972 and 1975, the flow of FDI steadily grew. In 1971, Taiwan was expelled from the United Nations, while in 1975, Taiwan was impacted by the first oil crisis and the death of Chiang Kai-Shek. However, the inflows of FDI were restored within a year or two of the shocks. The "Big-Ten Construction Projects", which consisted of six projects of the improvement of transportation and harbour facilities and four of the establishment of basic heavy industries, started from 1972. The projects attracted the flow of FDI into the basic metals and metal product, chemicals and transportation equipment industries. The 1980s was another fast-growing period of FDI except the depression year of 1982. The FDI distributed over into services, banking and insurance, construction and commerce, which satisfied the various needs for the newly industrialising economy.

In the 1990s, FDI decreased in 1991 and 1992, then increased steadily again in 1993 until 1995.

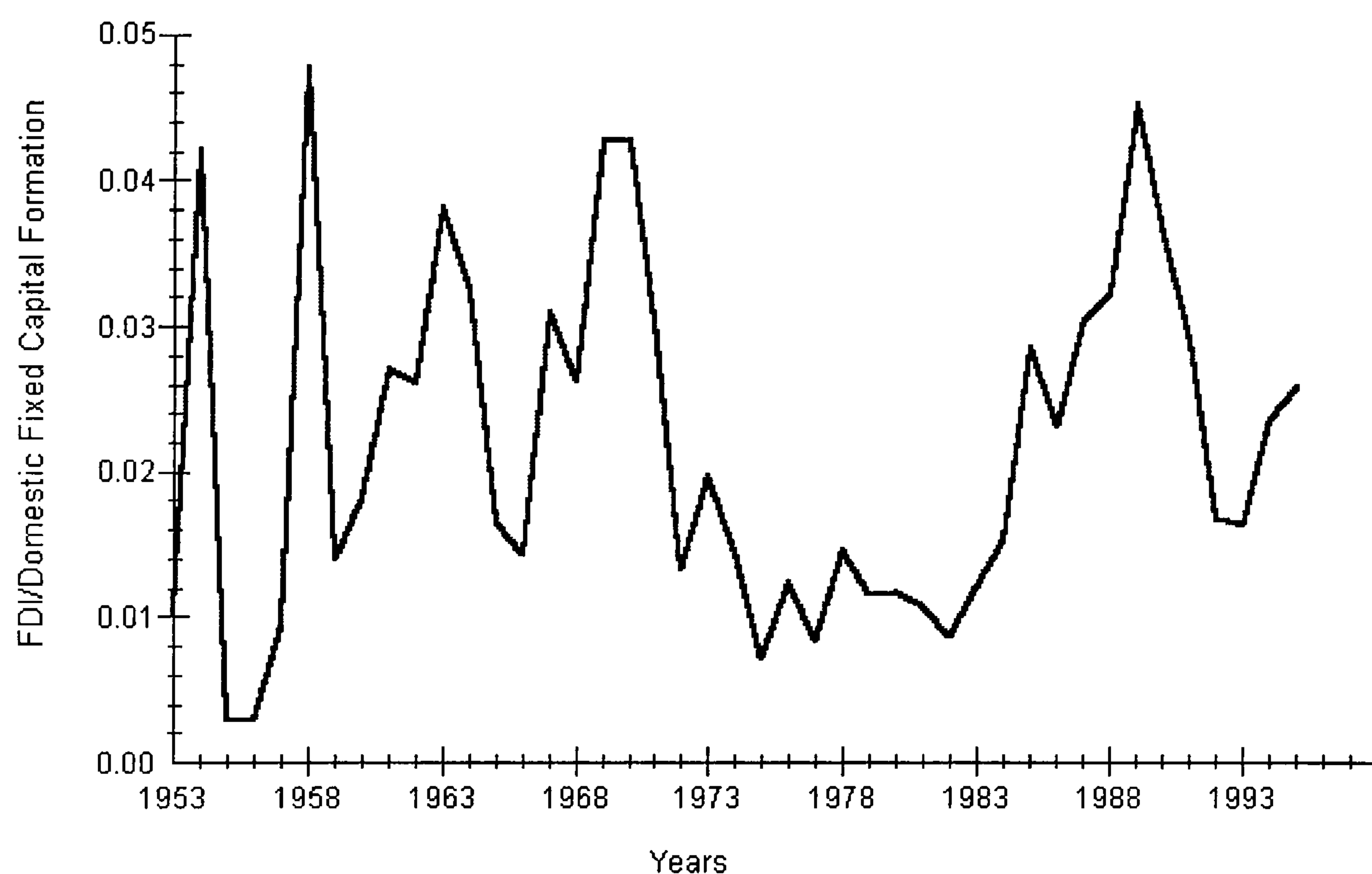
4.3.2 The Ratio of FDI to Fixed Capital Formation

Although the Taiwanese government has started to attract FDI since 1953, the amount of FDI arriving in Taiwan has always been significantly small compared to Taiwan's domestic investment. To compare the magnitude of FDI and domestic investment, we plot the ratio of FDI to Domestic Fixed Capital Formation as in Figure 4.2.

Figure 4.2 shows that the ratio of FDI to fixed capital formation has always been lower than 5%. At its peak, FDI in Taiwan reached only

4.8% of the fixed capital formation in 1958. Therefore, FDI in Taiwan has never served as the major source of capital formation.

Figure 4.2: The ratio of FDI to Domestic Fixed Capital Formation, Taiwan, 1953-1995

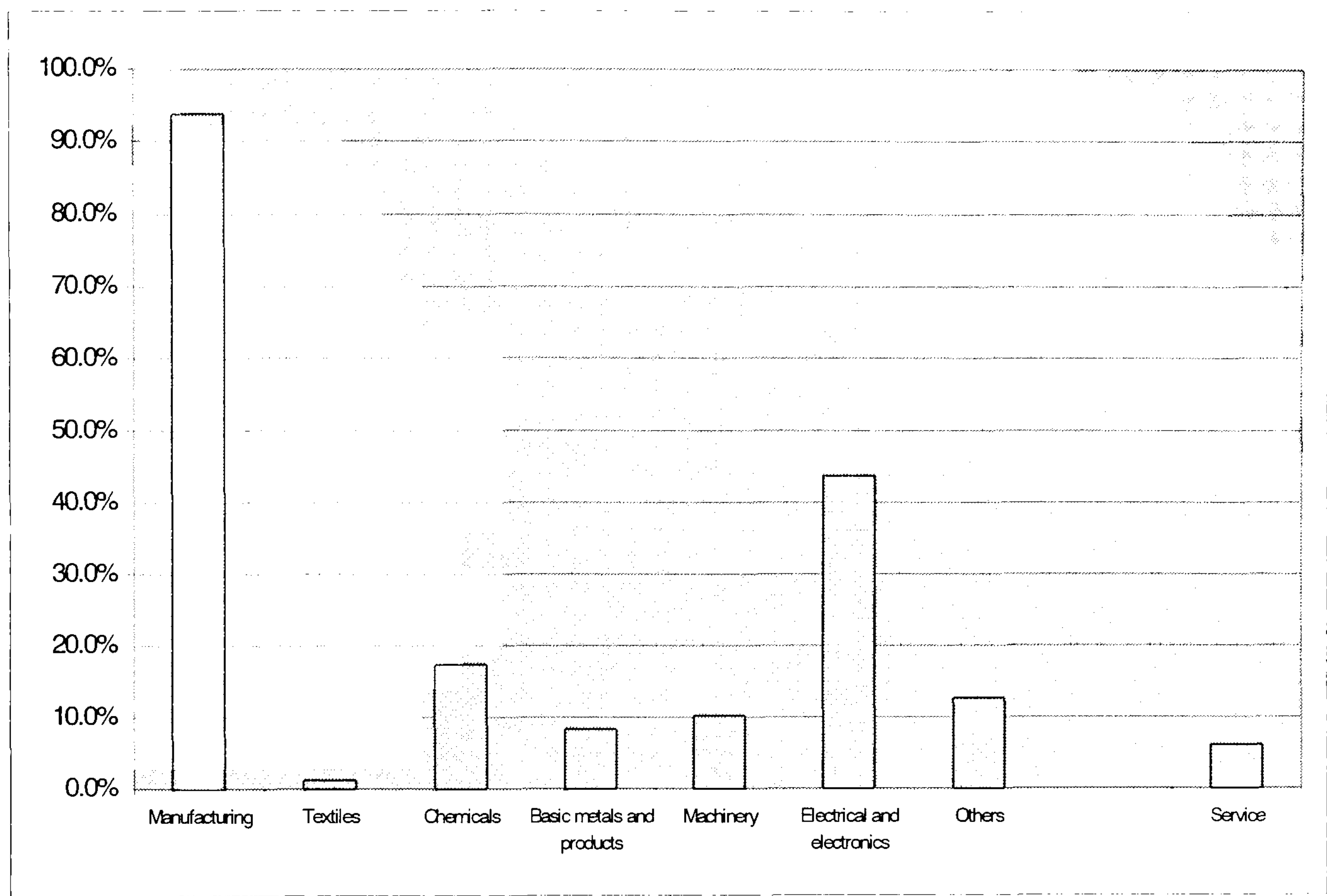


Source: Taiwan Statistical Data Book, Council for Economic Planning and Development, 1996. Central Bank of China, Balance of Payments, various issues.

4.3.3 The Industrial Structure of FDI

FDI in Taiwan has been concentrated heavily in the manufacturing sector. For example, in 1987, 93.84 percent of existing non-Chinese FDI was in the manufacturing sector. As showed in Figure 4.3, the services sector only shared about 6.16% of existing non-Chinese FDI. Among the manufacturing industries, the electrical and electronics industry accounted for 43.74% of the total FDI and chemicals took 17.51%.

Figure 4.3: Arrival non-Chinese FDI by Industry, 1987

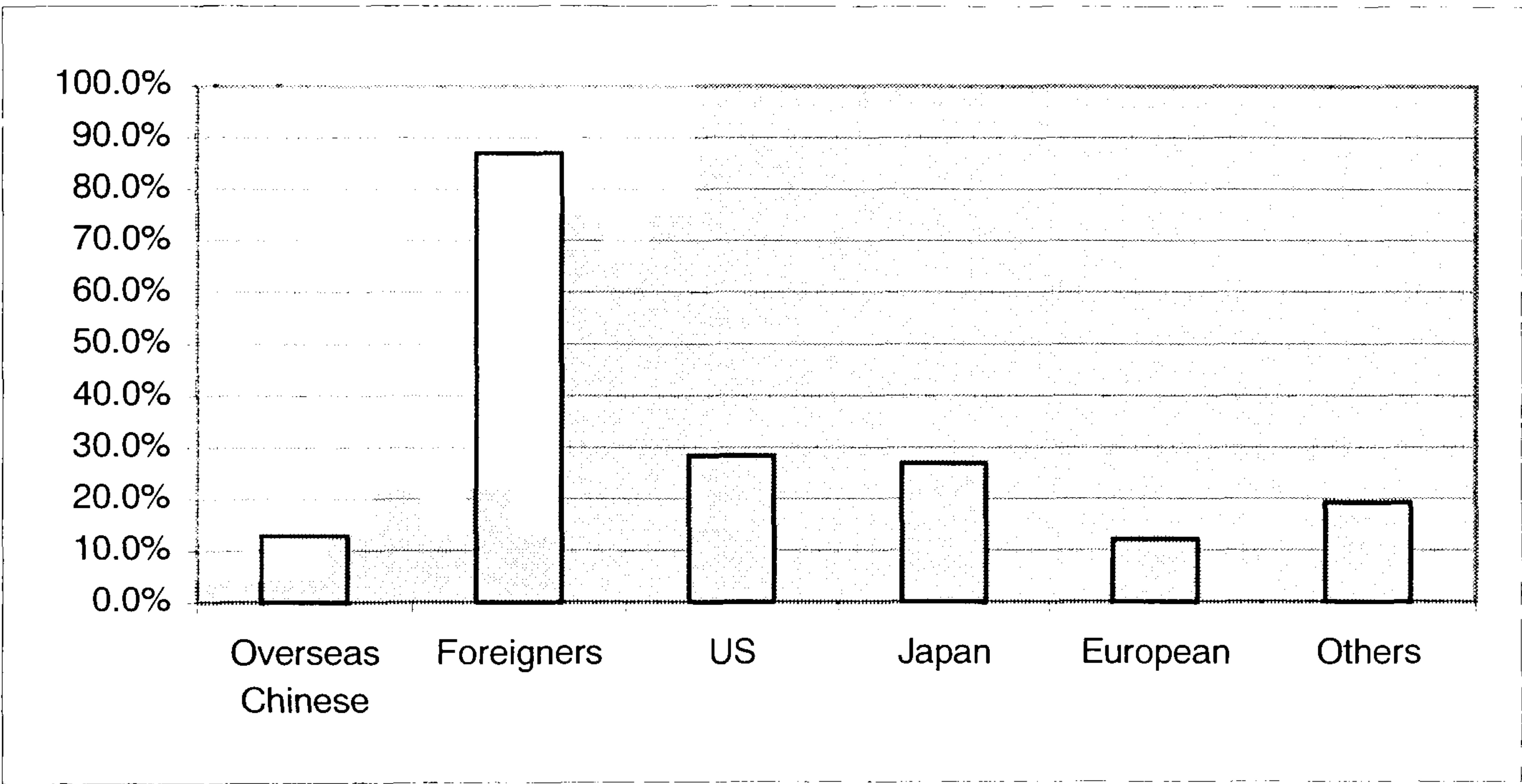


Source: Chi Schive,1990.

Non-Chinese foreign investors have dominated FDI in Taiwan. By 1995, a total of US\$22,261 million was approved. 87% of the approved amount of FDI was from non-Chinese (see Figure 4.4). Amongst non-Chinese, US is the biggest investor, taking a share of 28.5%; Japan took the second place with the share of 27%; and European countries was the third, accounting for 12.2%. Non-Chinese investors concentrated more on the manufacturing sector, especially in the electrical and electronics industry. For example, in 1987, 93.84% of the investment from non-Chinese investors arrived in manufacturing.

Since the leading non-Chinese investors possessed more advanced technology in production, one can expect that, the knowledge spill-over, if any, is likely to be brought through FDI done by these non-Chinese investors.

Figure 4.4: The share of FDI by source, 1953-1995



Source: Investment Commission, MOEA, Statistics of Approved Overseas and Foreign Investment, Republic of China, 1996.

4.3.4 FDI and Manufacturing Industry

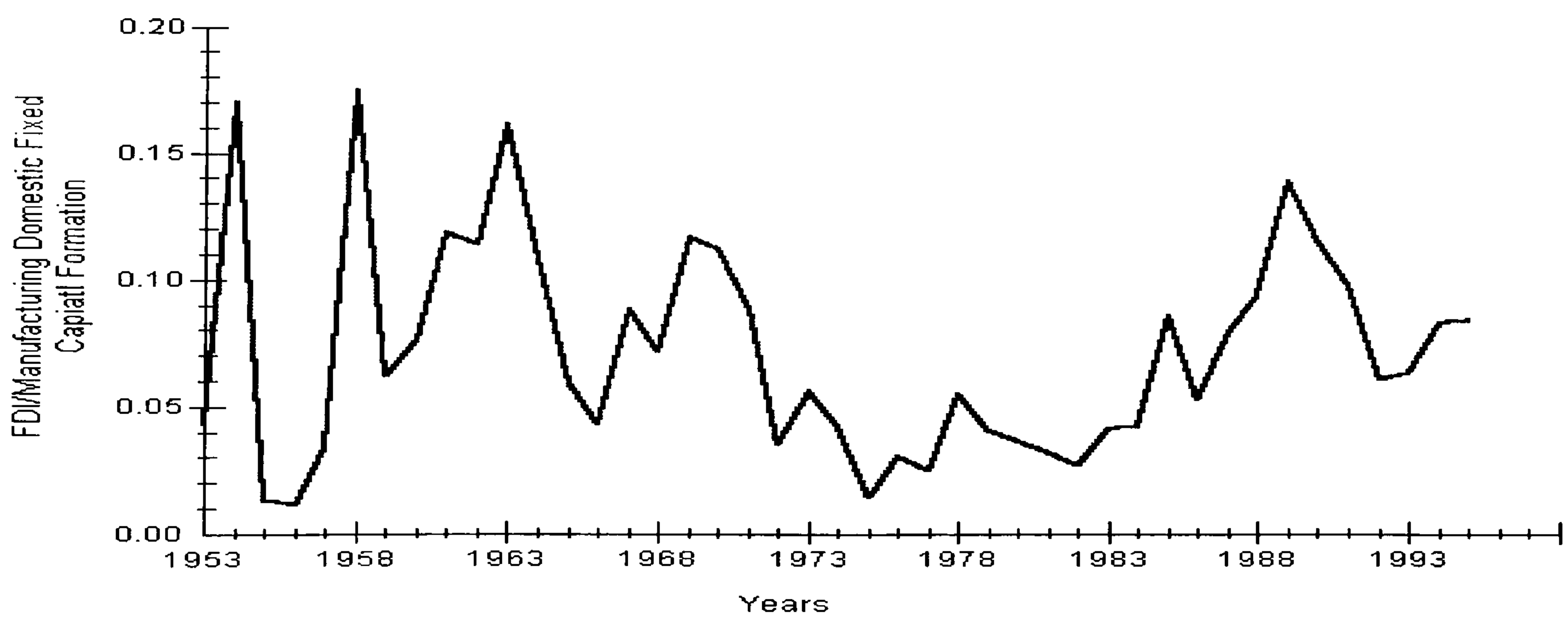
Due to the limitation on data availability, it has not been possible to apportion total FDI into individual industrial sectors. However, as FDI in Taiwan has been concentrated heavily in the manufacturing sector, here we also regard the data of overall FDI as the proxy of FDI in manufacturing. Roughly estimated as 80% of the total FDI that actually arrived, as an estimation adapted by Schive (1990), can be a suitable proxy for the total FDI that actually arrived in manufacturing industry.

Using the proxy variable, we therefore are able to estimate the relationship between FDI and GDP growth rate for manufacturing industry.

First, we compare the magnitude of FDI and domestic fixed capital formation in manufacturing industry as we have done for the overall level.

Figure 4.5 shows that, using overall FDI data as the proxy for manufacturing FDI, the ratio of FDI to domestic fixed capital formation is much higher than that for the overall economy. The foreign investment has been located more intensively in manufacturing sector. At its peak, the ratio reached 17.4% in 1958. As with the overall level, the ratio fluctuates but generally remained low in 1970s.

Figure 4.5: The ratio of FDI to Domestic Fixed Capital Formation in Manufacturing, Taiwan, 1953-1995



Source: Taiwan Statistical Data Book, Council for Economic Planning and Development, 1996. Central Bank of China, Balance of Payments, various issues.

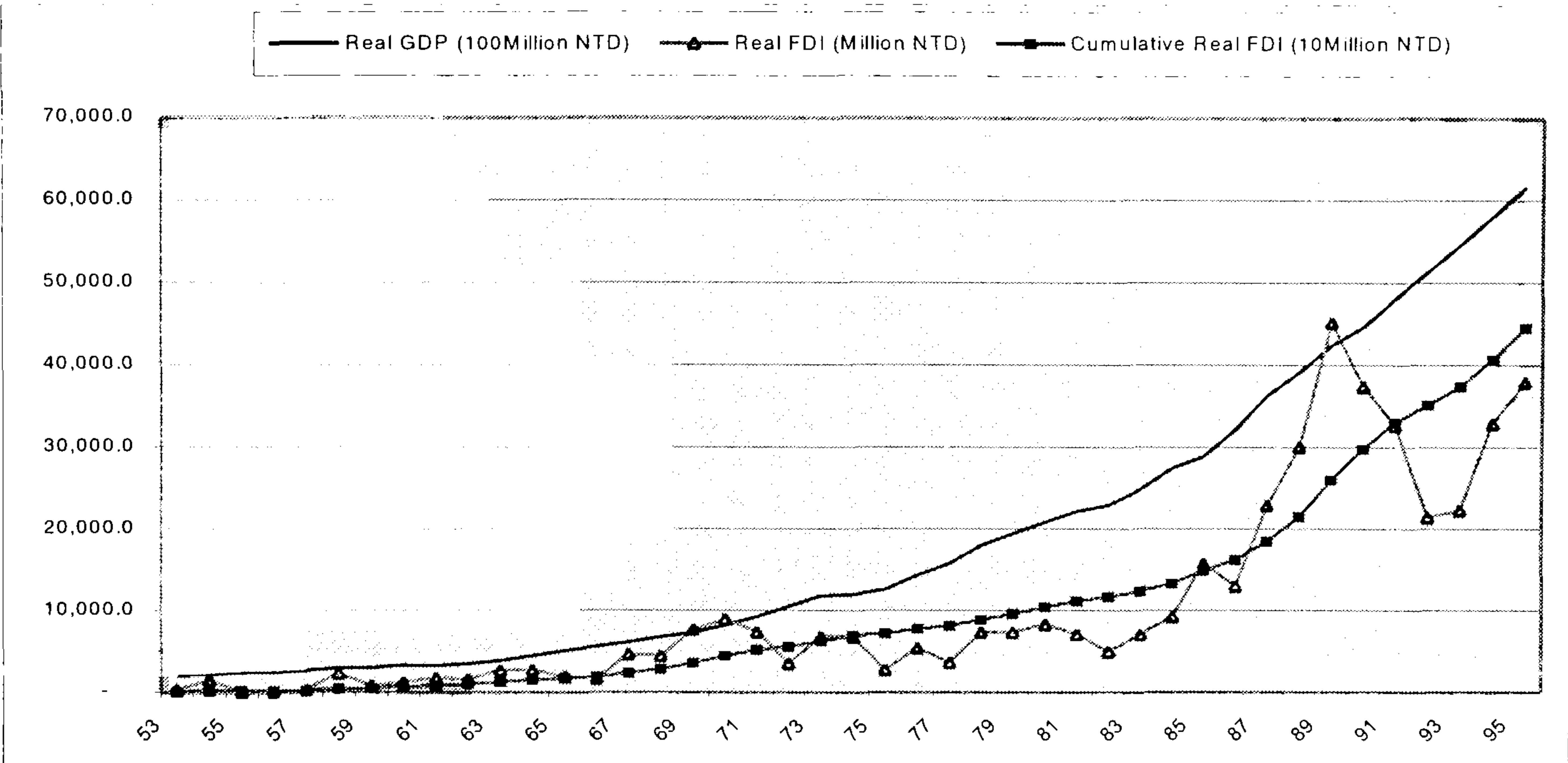
4.3.5 GDP, FDI, and Cumulative FDI in Taiwan - Overall and Manufacturing

Finally, since the model is based on a key assumption that FDI brings more advanced knowledge to the domestic economy, we are interested in the relationship between GDP and cumulative FDI. By the assumption, the knowledge stock in terms of cumulative FDI, which brought by foreign firms, will eventually become common knowledge to the domestic firms, and we also look at the cumulative FDI stocks.

Figure 4.6 shows the paths of GDP, FDI and cumulative FDI of Taiwan in real term in 1953-1995. As it reveals, real GDP in Taiwan has grown steadily since 1953. Compared with real GDP, real FDI in Taiwan has shown substantial fluctuation although it also showed a growing trend in general. This implies that FDI flow may have a less direct relationship with real GDP.

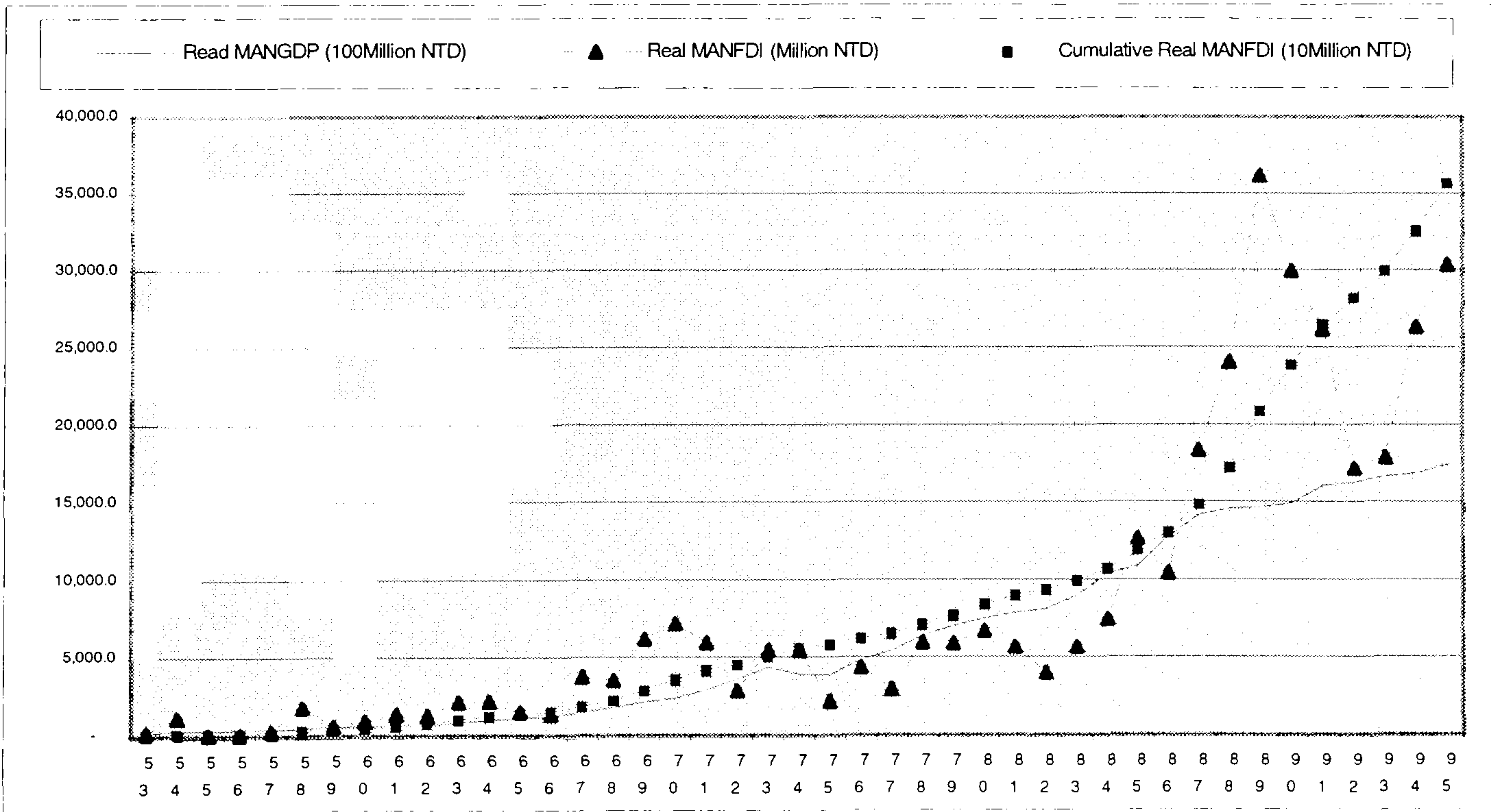
However, if we think of FDI as a stock of knowledge, which can be accumulated, and compare the cumulative real FDI with real GDP, the figure also shows that the cumulative real FDI grew in a very steady trend similarly to real GDP. This implies that GDP and cumulative FDI stocks may have a positive relationship and therefore FDI, may directly contribute to the domestic economy in terms of stocks of knowledge.

Figure 4.6: Taiwan's GDP, FDI and Cumulative FDI Stocks in real term, 1953-1995



Source: Taiwan Statistical Data Book, Council for Economic Planning and Development, 1996. Central Bank of China, Balance of Payments, various issues.

Figure 4.7: Taiwan's Manufacturing GDP, FDI and Cumulative FDI Stocks in real term, 1953-1995



Source: Taiwan Statistical Data Book, Council for Economic Planning and Development, 1996. Central Bank of China, Balance of Payments, various issues.

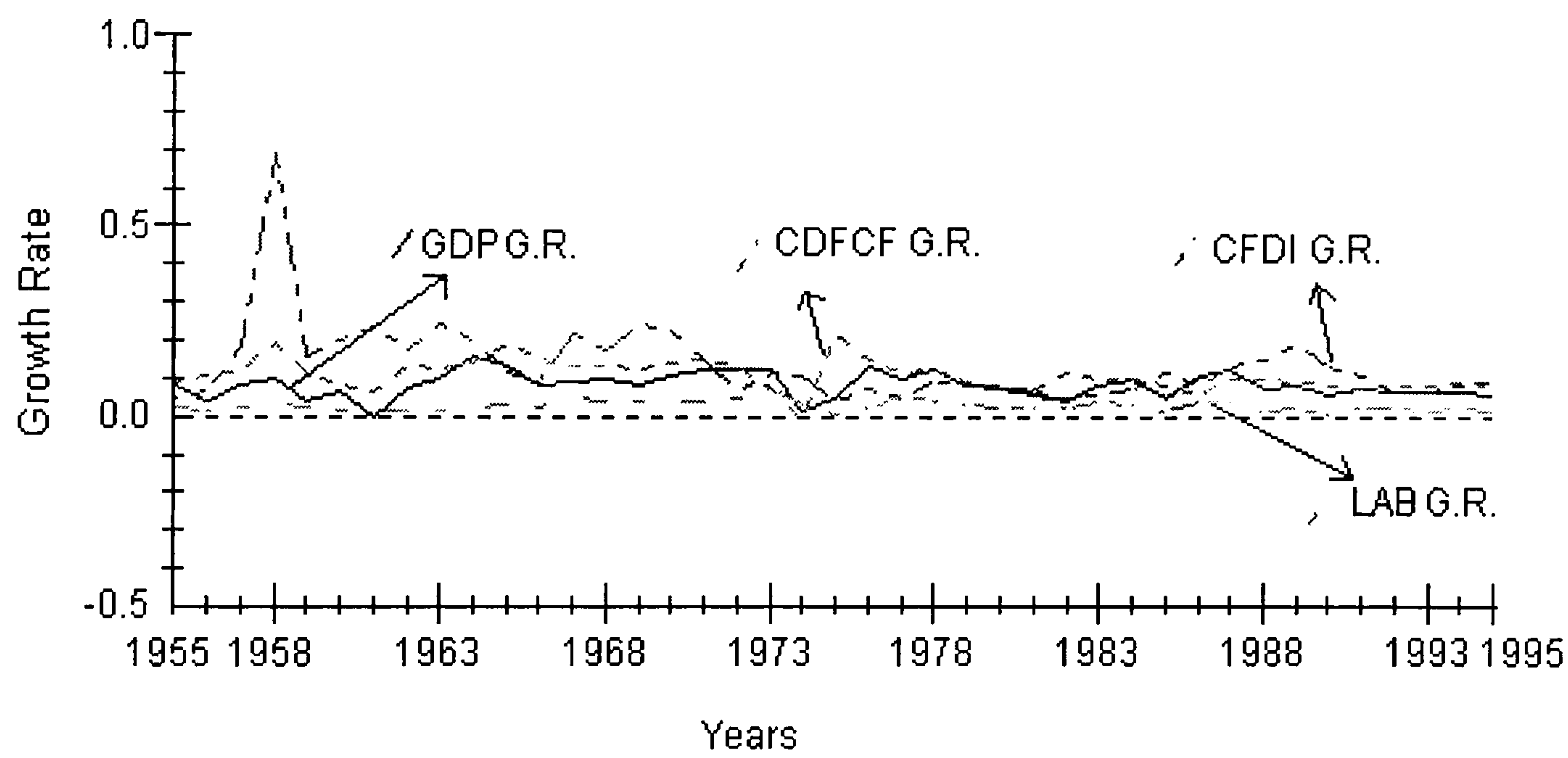
For manufacturing industry, Figure 4.7 shows the paths of GDP, FDI and cumulative FDI of Taiwan's manufacturing industry in real term during 1953-1995. Compared with Figure 4.6, it shows that the three paths possess very similar patterns by 1980s. They increase steadily from 1953 until 1985 and then real manufacturing FDI behaves more unstably than the others. This implies that in terms of manufacturing level, FDI flow may have a closer relationship with real GDP than at the overall level. Moreover, cumulative real FDI, the stock of accumulated knowledge, also shows a closer path with real GDP than at the overall level. Therefore, at the manufacturing level, it may reveal a stronger evidence of the effects of cumulative manufacturing FDI on manufacturing GDP.

4.3.6 The Growth of Output, Cumulative Domestic Fixed Capital Formation (CDFCF) and Cumulative FDI (CFDI) in Taiwan (1953-1995)

Figure 4.8 shows the growth rates of gross domestic production (GDP), cumulative domestic fixed capital formation (CDFCF), labour (LAB), and cumulative FDI (CFDI) in Taiwan for the period of 1955-1995 at the aggregate level. Growth rate of GDP goes down twice significantly; 1960-1961 and 1973-1974. During the same periods, cumulative domestic fixed capital formation also appears lower with similar path. However, cumulative foreign capital investment does not reveal a similar path, on the contrary, it appears relatively high during the same periods. The annual growth rates of GDP, cumulative domestic fixed

capital formation and cumulative foreign direct investment at the aggregate level are also shown in Table 4.1.

Figure 4.8: Growth rates of Gross Domestic Production (GDP), Cumulative Domestic Fixed Capital Formation (CDFCF), Labour (LAB), and Cumulative FDI (CFDI) at the Aggregate Level in Taiwan, 1955-1995



Source: Taiwan Statistical Data Book, Council for Economic Planning and Development, 1996. Central Bank of China, Balance of Payments, various issues.

Table 4.1: Growth rates of Gross Domestic Production (GDP), Cumulative Domestic Fixed Capital Formation (CDFCF), and Cumulative FDI (CFDI) at the Aggregate Level in Taiwan, 1955-1995

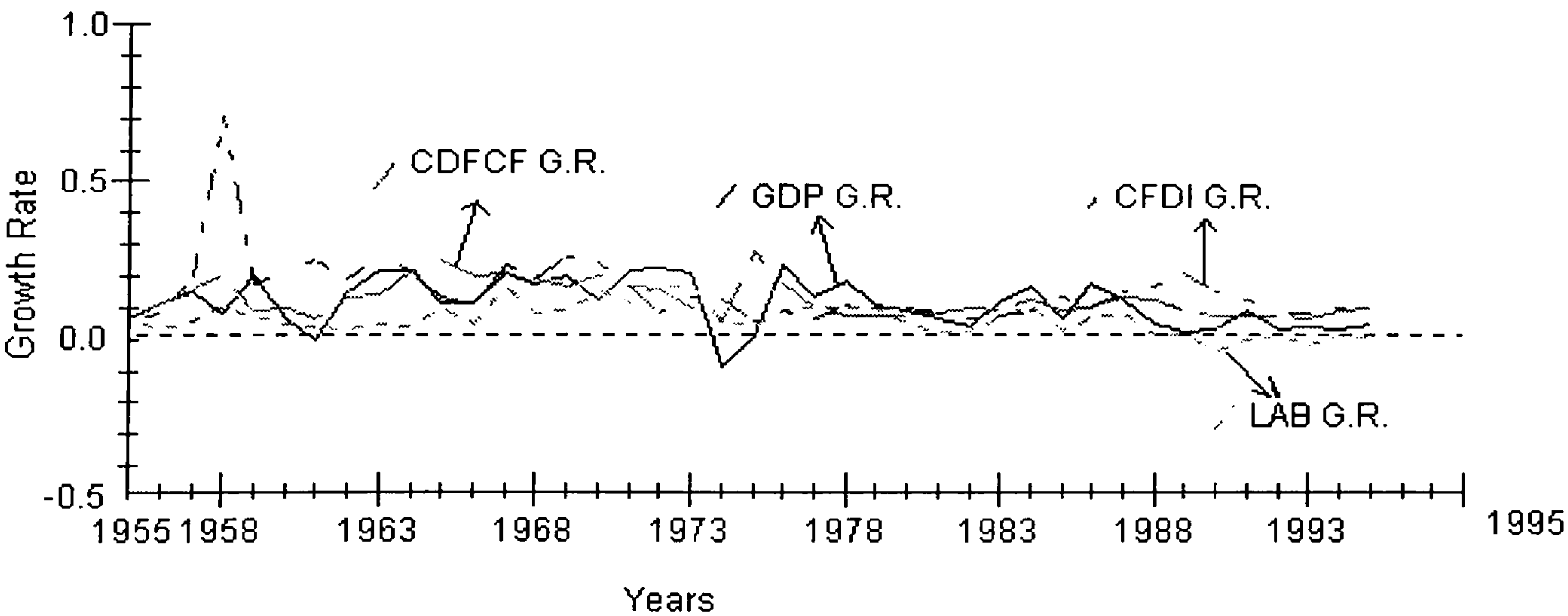
<i>Time</i>	<i>Growth of</i>			<i>Time</i>	<i>Growth of</i>			<i>Time</i>	<i>Growth of</i>		
<i>Period</i>	<i>GDP</i>	<i>CDFCF</i>	<i>CFDI</i>	<i>Period</i>	<i>GDP</i>	<i>CDFCF</i>	<i>CFDI</i>	<i>Period</i>	<i>GDP</i>	<i>CDFCF</i>	<i>CFDI</i>
53-56	0.068	0.142	0.643	70-71	0.121	0.152	0.152	85-86	0.110	0.054	0.084
56-57	0.082	0.121	0.182	71-72	0.125	0.129	0.066	86-87	0.120	0.095	0.132
57-58	0.100	0.193	0.687	72-73	0.121	0.073	0.115	87-88	0.076	0.100	0.150
58-59	0.042	0.113	0.159	73-74	0.011	-0.014	0.103	88-89	0.079	0.086	0.190
59-60	0.063	0.083	0.198	74-75	0.048	0.216	0.039	89-90	0.053	0.080	0.134
53-60 0.070 0.134 0.451				70-75 0.085 0.111 0.095				85-90 0.087 0.083 0.138			
60-61	-0.007	0.061	0.232	75-76	0.130	0.145	0.073	90-91	0.073	0.076	0.104
61-62	0.074	0.128	0.176	76-77	0.097	0.112	0.046	91-92	0.065	0.081	0.063
62-63	0.101	0.127	0.237	77-78	0.127	0.124	0.087	92-93	0.061	0.084	0.062
63-64	0.156	0.142	0.195	78-79	0.079	0.087	0.079	93-94	0.063	0.090	0.084
64-65	0.129	0.191	0.116	79-80	0.070	0.071	0.083	94-95	0.059	0.084	0.089
60-65 0.091 0.130 0.191				75-80 0.101 0.108 0.074				90-95 0.064 0.083 0.080			
65-66	0.085	0.148	0.093	80-81	0.060	0.075	0.066				
66-67	0.093	0.132	0.219	81-82	0.035	0.117	0.044				
67-68	0.096	0.135	0.171	82-83	0.081	0.102	0.059				
68-69	0.086	0.122	0.241	83-84	0.101	0.099	0.072				
69-70	0.108	0.137	0.222	84-85	0.048	0.079	0.112				
65-70 0.094 0.135 0.189				80-85 0.065 0.094 0.071				Average			
								0.082 0.111 0.175			

Source: Taiwan Statistical Data Book, Council for Economic Planning and Development, 1996. Central Bank of China, Balance of Payments, various issues.

In the case of manufacturing level, growth rate of cumulative FDI goes in a similar trend with GDP growth rate, especially in the period of 1960-1970 and the period of 1975-1985. Growth rate of GDP in manufacturing industry is negative in the years 1960-61 and 1973-75, while cumulative FDI also touches the recorded lowest (3.9%) during 1974-75 (see Figure 4.9).

On the five-year average, growth rates of GDP and cumulative domestic fixed capital formation in manufacturing both arrive at the highest during 1965-70 (14.8% & 17.4%), while lowest during 1990-95 (3.1% and 6.2%). Whereas for cumulative FDI, it reaches the highest during 1960-65 and the lowest during 1980-85 (7.1%) as shown in Table 4.2.

Figure 4.9: Growth rate of Gross Domestic Production (GDP), Cumulative Domestic Fixed Capital Formation (CDFCF), Labour (LAB) and Cumulative FDI (CFDI) in the Manufacturing Industry in Taiwan, 1955-1995



Source: Taiwan Statistical Data Book, Council for Economic Planning and Development, 1996. Central Bank of China, Balance of Payments, various issues.

Table 4.2: Growth rate of Gross Domestic Production (GDP), Cumulative Domestic Fixed Capital Formation (CDFCF) and Cumulative FDI (CFDI) in the Manufacturing Industry in Taiwan, 1955-1995

<i>Time</i>	<i>Growth of</i>			<i>Time</i>	<i>Growth of</i>			<i>Time</i>	<i>Growth of</i>		
<i>Period</i>	<i>Output</i>	<i>CDFCF</i>	<i>CFDI</i>	<i>Period</i>	<i>Output</i>	<i>CDFCF</i>	<i>CFDI</i>	<i>Period</i>	<i>Output</i>	<i>CDFCF</i>	<i>CFDI</i>
53-56	0.170	0.115	0.643	70-71	0.197	0.152	0.152	85-86	0.157	0.078	0.084
56-57	0.129	0.137	0.182	71-72	0.211	0.140	0.066	86-87	0.108	0.114	0.132
57-58	0.062	0.183	0.687	72-73	0.192	0.085	0.115	87-88	0.030	0.108	0.150
58-59	0.186	0.071	0.159	73-74	-0.105	0.040	0.103	88-89	0.007	0.074	0.190
59-60	0.047	0.078	0.198	74-75	-0.012	0.256	0.039	89-90	0.016	0.059	0.134
53-60	0.133	0.116	0.451	70-75	0.097	0.135	0.095	85-90	0.063	0.087	0.138
60-61	-0.017	0.05	0.232	75-76	0.220	0.155	0.073	90-91	0.074	0.055	0.104
61-62	0.129	0.113	0.176	76-77	0.110	0.078	0.046	91-92	0.015	0.054	0.063
62-63	0.198	0.123	0.237	77-78	0.168	0.060	0.087	92-93	0.022	0.051	0.062
63-64	0.197	0.199	0.195	78-79	0.086	0.053	0.079	93-94	0.014	0.073	0.084
64-65	0.101	0.231	0.116	79-80	0.074	0.057	0.083	94-95	0.031	0.078	0.089
60-65	0.122	0.143	0.191	75-80	0.132	0.08	0.074	90-95	0.031	0.062	0.080
65-66	0.097	0.181	0.093	80-81	0.048	0.068	0.066				
66-67	0.195	0.189	0.219	81-82	0.024	0.084	0.044				
67-68	0.157	0.177	0.171	82-83	0.102	0.076	0.059				
68-69	0.179	0.146	0.241	83-84	0.144	0.106	0.072				
69-70	0.110	0.177	0.222	84-85	0.049	0.072	0.112				
65-70	0.148	0.174	0.189	80-85	0.073	0.081	0.071	<i>Aver-age</i>			
								0.101 0.110 0.175			

Source: Taiwan Statistical Data Book, Council for Economic Planning and Development, 1996. Central Bank of China, Balance of Payments, various issues.

4.4 The Evidence

The data used in the analysis are presented in **Appendix II**. The empirical results were obtained by ordinary least squares (OLS) technique using equation (4.6). Because of possible time differences between investment decision and realisation of investment, the model was also tested using independent variables lagged for one year. Here we tested with the assumption that the depreciation rate for total fixed capital stock is 5%, which is about the value of the long term interest rate.

4.4.1 FDI in All Industries

Table 4.3 lists all the coefficients of independent variables and the corresponding T-ratios, which are attained by using the data of all industrial level and applying Equation (4.6). The regression functions can be written as:

$$DLRGDP = 0.0099 + 0.3776DLRCUMK5 + 1.2410DLLAB - 0.0177DLCSUMRKF \quad (4.9)$$

$$DLRGDP = 0.0030 + 0.3477DLRCUMK5 + 0.1624DLRCUMK5(-1) + 1.0444DLLAB - 0.01180LCSUMRKF - 0.1522LCSUMRKF(-1) \quad (4.10)$$

In Table 4.3, Test (1) shows that the coefficients of growth rate of cumulative domestic fixed capital formation (*DLRCUMK5*) and growth rate of employment (*DLLAB*) are significantly different from zero at 1% significant level. However, the growth rate of the cumulative stock of FDI (*DLCSUMRKF*) is insignificantly different from zero at both 1% and 5% levels, which implies that the cumulative stock of foreign capital does not significantly contribute to the growth of GDP in Taiwan.

Table 4.3: Regression for GDP at All Industries Level in Taiwan, 1953-1995

	<i>Constant</i>	<i>DLRCUMK5</i>	<i>DLRCUMK5(-1)</i>	<i>DLLAB</i>	<i>DLCSUMRKF</i>	<i>DLCSUMRKF(-1)</i>	<i>R Square</i>	<i>N</i>
<i>Test (1)</i>	0.0099 (0.7708)	0.3776 (3.7417)*		1.2410 (4.5614)*	-0.0177 (-1.1105)		0.49162	42
<i>Test (2)</i>	0.0030 (0.2057)	0.3477 (3.2969)*	0.1624 (1.3718)	1.0444 (3.3573)*	-0.0180 (-0.4581)	-0.1522 (-0.8959)	0.51722	41

*: Significantly different from zero at the 1% level.

Also see **Appendix III & IV**

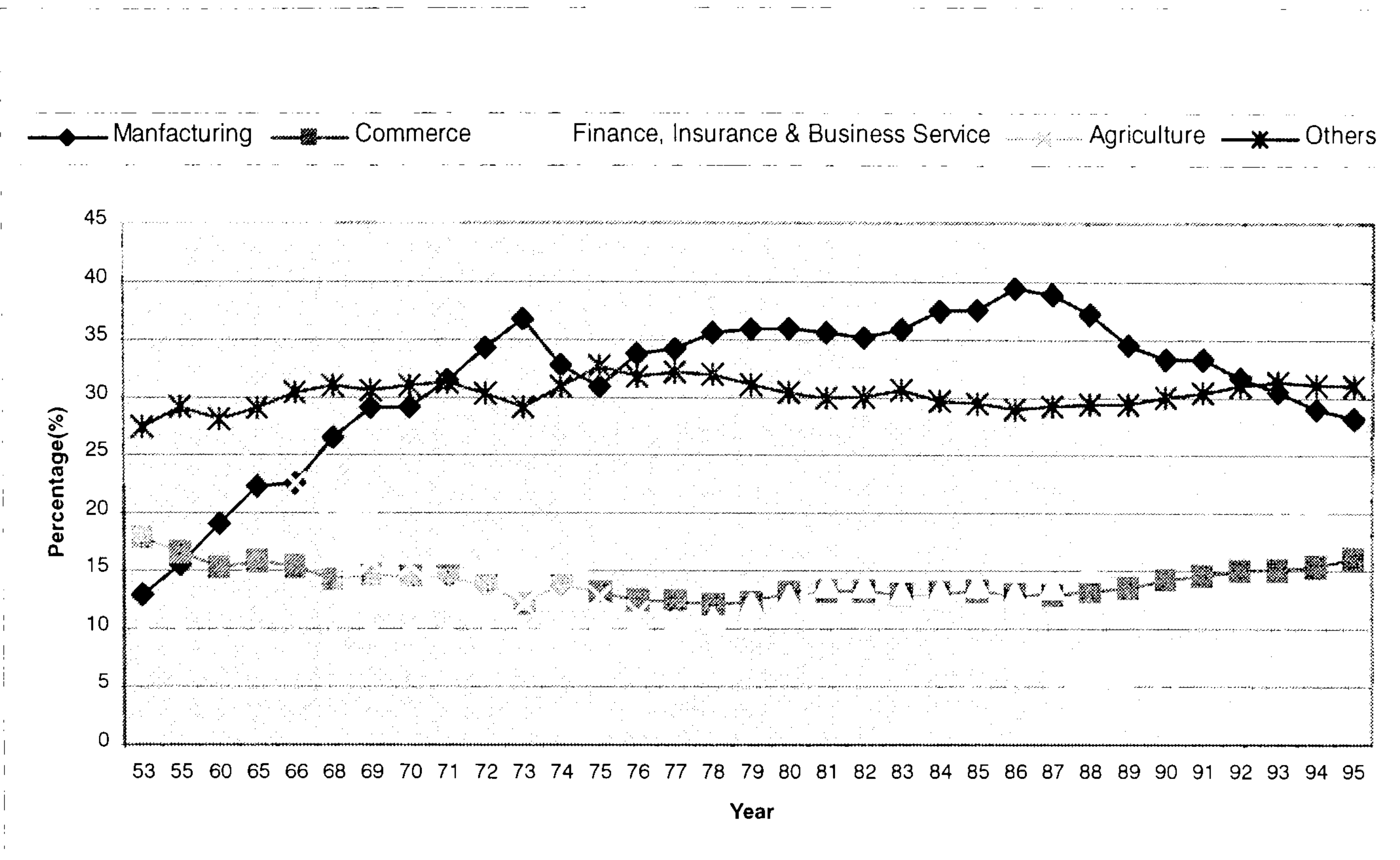
Test (2) shows that even if we consider time differences between investment decision and realisation of investment by adding one-year lagged variables for growth rate of cumulative domestic fixed capital formation (*DLRCUMK5(-1)*) and growth rate of cumulative FDI (*DLCSUMRKF(-1)*), the respective coefficients are still insignificantly different from zero. Same as in Test (1), only the coefficients of growth rate of cumulative domestic fixed capital formation (*DLRCUMK5*) and

growth rate of employment ($DLLAB$) are significantly different from zero at 1% significant level.

Since γ in Eq. (4.6) is insignificant in Test (1) and Test (2), we therefore reject the hypothesis that the growth rate of FDI helps to stimulate the growth rate of GDP in Taiwan in all industry level.

However, the story has not ended. The majority of accumulation of FDI in Taiwan has always been allocated in manufacturing industry. However, Figure 4.10 shows that the manufacturing industry accounts for less than 40% of Taiwan's overall GDP. Besides, since 1986, the percentage of manufacturing in overall GDP has been successively declining. Therefore, one possible explanation to the insignificant effect of FDI at all industries level is that, the technology spill-over effect of FDI may not be able to cross over different industries easily. The technology spill-over effect of GDP is therefore unable to be detected at the overall level. To verify this assumption, it is straightforward that we have to test solely at manufacturing level.

Figure 4.10: GDP by Industry in Taiwan, 1953-1995



Source: Taiwan Statistical Data Book, Council for Economic Planning and Development, 1996.

4.4.2 FDI in Manufacturing Industry

Table 4.4 lists all the coefficients of independent variables and the corresponding T-ratios, which are attained by using the data of manufacturing industry and applying Equation (4.6). The regression functions can be written as:

$$DLRGDPMAN = 0.0215 + 0.1957DLRCFFM5 + 0.8131DLLABMAN + 0.1275DLCSUMRKF \quad (4.11)$$

$$\begin{aligned}
DLRGDPMAN = & 0.0214 + 0.0965DLRCFFM5 + 0.4083DLRCFFM5(-1) \\
& + 0.7003DLLABMAN - 0.05537DLCSUMRKF - 0.0333DLCSUMRKF(-1)
\end{aligned}$$

(4.12)

Table 4.4: Regression for GDP in Taiwan at Manufacturing Industry Level, 1953-1995

	<i>Constant</i>	<i>DLRCFFM5</i>	<i>DLRCFFM5(-1)</i>	<i>DLLABMAN</i>	<i>DLCSUMRKF</i>	<i>DLCSUMRKF(-1)</i>	<i>R Square</i>	<i>N</i>
<i>Test (3)</i>	0.0215 (0.99474)	0.1957 (0.9677)		0.8131 (3.6899)*	0.1275 (3.3463)*		0.4945	42
<i>Test(4)</i>	0.0214 (0.87237)	0.09647 (0.44787)	0.4083 (1.7567)**	0.70029 (3.0276)*	-0.5537 (-0.5902)	0.0333 (-0.8676)	0.4611	41

*: Significantly different from zero at the 1% level.

**: Significantly different from zero at the 10% level.

Also see **Appendix V & VI**.

Unlike at the overall level, Test (3) in Table 4.4 shows that the coefficients of growth rate of cumulative FDI (*DLCSUMRKF*) and growth rate of employment (*DLLABMAN*) are both significantly different from zero at 1% significant level. We therefore do not reject the hypothesis so that growth rate of FDI helps to stimulate growth rate of GDP in manufacturing industry of Taiwan.

The result in Test (3) shows the coefficient of growth rate of cumulative domestic fixed capital formation (*DLRCFFM5*) is insignificant. This means that in manufacturing industry, the growth in domestic Fixed Capital Formation is not significantly attributing to GDP growth. Since manufacturing industry usually relies more heavily on technology than

other industries like commerce industry, it makes sense that FDI brings more advanced technology to the industry and hence attributes significantly to growth rate of production of manufacturing industry.

To complete the comparison, we also add-in one-year lagged variables for growth rate of domestic Cumulative Fixed Capital Formation ($DLRCFFM5(-1)$) and growth rate of cumulative FDI ($DLCSUMRKF(-1)$) as in Test (4). The result shows that only growth rate of Employment ($DLLABMAN$) is significantly different from zero at 1% significant level, and growth rate of domestic Cumulative Fixed Capital $DLRCFFM5(-1)$ is significantly different from zero at 10% level. However, in this case, R square value is only 0.4611, which is lower than in Test (3) of 0.4945., despite of it's bigger number of independent variables. Therefore Test (3) can explain better the growth rate of GDP in manufacturing than Test (4), which implies that we do not reject the hypothesis that growth rate of FDI helps to stimulate growth rate of GDP in manufacturing industry of Taiwan.

4.4.3 Granger Test and Instrumental Variables Estimation

A Granger causality test for the exogeneity of FDI growth is shown as Appendix VII, in that we regress the growth of manufacturing FDI on the growths of GDP and investment. The result shows no evidence of exogeneity of FDI growth.

An instrumental variables (IV) estimation with lagged independent variables and the US's growth of GDP has also been conducted (see

Appendix VIII). Given CHI-SQ value equals to 0.78, and the 5% critical value is 14.07, the results suggest that this estimation does not reject the null hypothesis (the instruments are valid), and pass the Sargan test. Because the instruments are chosen in a rather arbitrary fashion, although the result suggests that the instruments may be valid, it may also indicate that there is something wrong with the underlying equation.

4.5 Conclusion

Foreign Direct Investment (FDI) plays a significant role in the process of technological diffusion, especially for developing countries which usually do not have enough domestic capital and high capability of R&D. A developing country can attract capital from the developed world by introducing industrial policy which favours foreign capital.

Inspired by Barro and Sala-i-Martin (1995, Ch.4), we have constructed a time series econometric model to test the hypothesis that FDI is one of the engines for technology development, which cultivates the increase of growth rate for the developing country. We have tested the hypothesis using OLS and taking the Taiwanese economy as an example.

Taiwan is a good example to test the argument because it has been regarded as one of the fastest-developing countries in the Asia-Pacific. She has established relatively advanced hi-tech industries such as computer manufacture, compared with other newly developing countries like South Korea and Singapore, or regions like Hong Kong.

In addition, Taiwan has been imposing favourable policy toward foreign capital since 1953. The policy started soon after the government retreated from Mainland China to Taiwan. For over 40 years, more than 80% of foreign capital came from highly developed countries like USA, European countries and Japan. At the same time, Taiwan's GDP grew from merely US\$1,674 million in 1953 to US\$264 billion in 1995. The

remarkable growth record in this small island may well contain some explanations for the relationship between FDI and economic growth.

This chapter has tried to link up these two phenomena and look for the causality by adopting a modified model from Endogenous Growth theory and applying a Time-Series econometric testing. The independent variables we have chosen include cumulative fixed capital formation, labour force, and cumulative FDI. The hypothesis we have tested is that the cumulative knowledge resulting from the cumulative FDI helps to stimulate the growth rate of GDP in Taiwan.

Using the data from 1953-1995, the coefficient of FDI growth of Taiwan's manufacturing industry is significantly different from zero at 1% level. The positive results of the exercise have shown that even though FDI does not significantly attribute to Taiwan's growth at the overall economy level, FDI has been very important to the Taiwanese manufacturing industry. As manufacturing industry usually plays a very important role for a developing country at the early economic developing stage, the result suggests that FDI can be an engine for economic growth.

FDI not only can be a source of additional capital that alleviates the capital shortages of the developing country but also can introduce the advanced technology to the developing country, which is often far beyond the innovative ability of the developing country. Through learning-by-doing, the diffusion of technology spreads from foreign

investment to local firms and from a local firm to another. Local firms can also accumulate the knowledge for their future development. With more advanced technology, a developing country improves its productivity, and hence increases its economic growth.

Chapter 5

Conclusions

From Chapter 1 we have noticed a general trend towards the importance of economic growth theory on the transfer of technology from developed countries to developing countries. Two particular areas of growth theory are concerned with Trade Regulation and FDI. We have constructed in Chapter II and Chapter III useful theoretical additions to some of the existing theoretical growth models for Trade Regulation and FDI.

In Chapter 2, two endogenous growth models were used in our framework. The first model of product variety expansion is based on Romer (1987, 1990) which specifies various types of productive inputs in the context of technological change and economic growth. The second model of product quality improvement is based on Chapter 7 of Barro and Sala-i-Martin (1995) which allows for improvement in quality or productivity of each type of productive inputs that are produced and improved by a monopolistically competitive foreign industry in a developed country.

We have incorporated these two endogenous models into the comparison of the national income generated under a tariff and a VER. These models have successfully constructed the framework taking the number of intermediate inputs as one of the key factors in the production function. By using these models, we have been able to treat the number of inputs which are imported into a developing country as one of the major factors that determine the national income of the developing country. Since a protective trade policy will finally determine the number of goods to be imported, a developing country has to consider the effect of such policy on the number of input when choosing a policy to impose.

The idea of expansion in the varieties of inputs or improvement in the quality of inputs justifies the existence of monopoly profits which sustain a continuous innovation on varieties or qualities of goods, and hence benefits the economy. Such monopoly profits are often affected by the protective trade policies that are used by developing countries because more types of goods or better quality goods are usually imported from foreign countries due to the insufficient innovative capability of the developing countries themselves.

We have demonstrated that a VER has less effect on profits and has less effect on product variety or quality than a tariff. In some circumstances, the benefits of having more varieties or different qualities of imports will offset the cost of losing the quota revenue caused by a VER. Therefore a VER may be a less harmful policy than a

tariff, and should a developing country need to exercise a protective trade policy, a VER may be a better choice than a tariff.

However, the limitation of the models is that they do not allow the domestic country to engage in product innovation or imitation. Besides, the result depends on the simple functional form. The functional form of the variety model is a simple case of constant elasticity of substitution of the capital goods. The goods are neither direct complements nor direct substitutes. Further research can be done on how to loosen these restrictions.

In Chapter 3, we examine the theory of the effect of FDI on economic growth. While domestic firms have better knowledge and access to the domestic markets, there must be some justification for a foreign firm to enter the market. It is most likely that a foreign firm that decides to invest in another country enjoys higher productive efficiency than its domestic competitors. For a developing country in particular, FDI with a combination of advanced management skills and advanced technology may serve as the bridge to introduce advanced technology from developed countries.

Based on Grossman and Helpman (1992, Ch.11), we have introduced FDI as the channel for developing countries to learn and imitate advanced technology. By adding a second class of foreign producers who innovate in their home base but produce in the developing country, and balancing the three sets of market conditions (free entry conditions,

no-arbitrage conditions and market clearing conditions), we have been able to construct a framework that provides a steady-state equilibrium for the rates of imitation, foreign direct investment and economic growth in the long run for the hypothetical developed and developing countries.

With such a framework, we have been able to examine the effects on the steady-state equilibrium and relative wages from changing the values of a set of parameters, which include the cost of imitation and innovation, the populations of the developed and developing countries, the additional marginal cost of production that FDI firms have to pay, the global interest rate, the elasticity of substitution between any two products, and the governmental subsidy to local knowledge accumulation in the developed and developing countries.

Besides the relationships among imitation, FDI, growth and the set of parameters, the most important finding of this research is that a governmental policy to promote local learning activities does not necessarily improve the relative condition of labour in the policy-active country. This is mainly due to the changes in relative labour demand in the developed and developing countries resulting from such a policy. When a developing country subsidises local imitation, the rate of foreign direct investment will decrease, which may reduce the total demand for the labour of the developing country and hence reduce the relative wage conditions in the developing country.

For simplicity, we treated FDI as the only channel through which a developing country can imitate more advanced technology. However, developing countries may also imitate without the existence of FDI as described in Grossman and Helpman (1992, Ch.11). Glass and Saggi (1999) also distinguish the effect of FDI on international technology transfer between the countries who can imitate on their own prior to introducing FDI, and the countries who cannot imitate without the existence of FDI.

There is one more type of developing countries who are not able to imitate even with the existence of FDI. Our suggestion is that more advanced research should and can be done to study FDI's effect on growth for these three groups of developing countries. This would require further investigation to dismantle the factors that determine the cost of imitation or imitation and the basic knowledge or training required to prepare the labour force in developing countries to work with new technologies. For this, human capital is likely to be a crucial factor.

In Chapter 4, we have conducted an empirical study. Inspired by Barro and Sala-i-Martin (1995, Chapter 4), we have constructed a time series econometric model to test the hypothesis that FDI is one of the engines for technology development, which cultivates the increase of growth rate for the developing country. We have used the OLS technique for the test.

We have chosen the Taiwanese economy as an example because the Taiwanese economy has been regarded as one of the most successful developing economies in the Asia-Pacific region. Besides, Taiwan has been imposing favourable policy toward foreign capital since 1953. We tested the relationship between the growth rate of cumulative stock of FDI and growth rate of GDP using the Taiwanese data (1953-1995).

Although the result shows that the coefficient of the cumulative FDI growth rate and the GDP growth rate is insignificantly different from zero at 1% level at Taiwan's overall industry levels, the coefficient of which of Taiwan's manufacturing industry is significantly different from zero at 1%. The results of the exercise have shown that even though FDI does not significantly attribute to Taiwan's growth at the overall economy level, FDI has been very important to the Taiwanese manufacturing industry. As the manufacturing industry usually plays a very important role for a developing country at the early economic developing stage, the result suggests that FDI can be an engine for economic growth.

Developing countries often encounter capital shortage and insufficiency in technology or skill at the early stage of economic development. FDI from the developed country can alleviate such capital difficulty and also bring in advanced technology or skills to the developing country. Through learning-by-doing, technology can further spread from foreign investment to indigenous firms and from an indigenous firm to another. This also helps indigenous firms to accumulate the knowledge and skills needed for further development.

This chapter provides us with some indications of the possible significance of the advances in theory that we have been examining. Using a variant of Barro and Sala-i-Martin (1995, Ch.4), it suggests that the relationship of FDI to the growth of Taiwanese economy in recent decades has been particularly important. This shows the importance of fully incorporating FDI as one of the major parameters within economic growth-technology transfer models related to developing countries.

**Appendix I The Values of The Function $\phi(\alpha, \theta)$, α , θ , and
The Equivalent Tariff, τ , in Figure 1**

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	3.00E-02	-1.49E-02	1.51E-02
1.00E-02	3.00E-02	-1.46E-02	1.51E-02
2.00E-02	3.00E-02	-1.43E-02	1.51E-02
3.00E-02	3.00E-02	-1.40E-02	1.51E-02
4.00E-02	3.00E-02	-1.37E-02	1.51E-02
5.00E-02	3.00E-02	-1.34E-02	1.51E-02
6.00E-02	3.00E-02	-1.31E-02	1.51E-02
7.00E-02	3.00E-02	-1.28E-02	1.51E-02
8.00E-02	3.00E-02	-1.25E-02	1.51E-02
9.00E-02	3.00E-02	-1.22E-02	1.51E-02
1.00E-01	3.00E-02	-1.19E-02	1.51E-02
1.10E-01	3.00E-02	-1.16E-02	1.51E-02
1.20E-01	3.00E-02	-1.14E-02	1.51E-02
1.30E-01	3.00E-02	-1.11E-02	1.51E-02
1.40E-01	3.00E-02	-1.08E-02	1.52E-02
1.50E-01	3.00E-02	-1.05E-02	1.52E-02
1.60E-01	3.00E-02	-1.02E-02	1.52E-02
1.70E-01	3.00E-02	-9.87E-03	1.52E-02
1.80E-01	3.00E-02	-9.57E-03	1.52E-02
1.90E-01	3.00E-02	-9.27E-03	1.52E-02
2.00E-01	3.00E-02	-8.97E-03	1.52E-02
2.10E-01	3.00E-02	-8.68E-03	1.52E-02
2.20E-01	3.00E-02	-8.38E-03	1.52E-02
2.30E-01	3.00E-02	-8.08E-03	1.52E-02
2.40E-01	3.00E-02	-7.78E-03	1.52E-02
2.50E-01	3.00E-02	-7.48E-03	1.52E-02
2.60E-01	3.00E-02	-7.18E-03	1.52E-02
2.70E-01	3.00E-02	-6.88E-03	1.52E-02
2.80E-01	3.00E-02	-6.58E-03	1.52E-02
2.90E-01	3.00E-02	-6.28E-03	1.52E-02
3.00E-01	3.00E-02	-5.98E-03	1.52E-02
3.10E-01	3.00E-02	-5.68E-03	1.52E-02
3.20E-01	3.00E-02	-5.38E-03	1.52E-02
3.30E-01	3.00E-02	-5.08E-03	1.52E-02
3.40E-01	3.00E-02	-4.77E-03	1.52E-02
3.50E-01	3.00E-02	-4.47E-03	1.52E-02
3.60E-01	3.00E-02	-4.17E-03	1.52E-02
3.70E-01	3.00E-02	-3.87E-03	1.52E-02
3.80E-01	3.00E-02	-3.56E-03	1.53E-02
3.90E-01	3.00E-02	-3.26E-03	1.53E-02
4.00E-01	3.00E-02	-2.96E-03	1.53E-02
4.10E-01	3.00E-02	-2.65E-03	1.53E-02
4.20E-01	3.00E-02	-2.35E-03	1.53E-02
4.30E-01	3.00E-02	-2.04E-03	1.53E-02
4.40E-01	3.00E-02	-1.74E-03	1.53E-02
4.50E-01	3.00E-02	-1.43E-03	1.53E-02
4.60E-01	3.00E-02	-1.12E-03	1.53E-02
4.70E-01	3.00E-02	-8.16E-04	1.53E-02
4.80E-01	3.00E-02	-5.09E-04	1.53E-02
4.90E-01	3.00E-02	-2.01E-04	1.53E-02
5.00E-01	3.00E-02	1.07E-04	1.53E-02
5.10E-01	3.00E-02	4.16E-04	1.53E-02
5.20E-01	3.00E-02	7.26E-04	1.54E-02
5.30E-01	3.00E-02	1.04E-03	1.54E-02
5.40E-01	3.00E-02	1.35E-03	1.54E-02
5.50E-01	3.00E-02	1.66E-03	1.54E-02
5.60E-01	3.00E-02	1.97E-03	1.54E-02
5.70E-01	3.00E-02	2.28E-03	1.54E-02
5.80E-01	3.00E-02	2.59E-03	1.54E-02
5.90E-01	3.00E-02	2.91E-03	1.54E-02
6.00E-01	3.00E-02	3.22E-03	1.54E-02
6.10E-01	3.00E-02	3.54E-03	1.55E-02
6.20E-01	3.00E-02	3.86E-03	1.55E-02
6.30E-01	3.00E-02	4.17E-03	1.55E-02
6.40E-01	3.00E-02	4.49E-03	1.55E-02
6.50E-01	3.00E-02	4.81E-03	1.55E-02
6.60E-01	3.00E-02	5.13E-03	1.55E-02
6.70E-01	3.00E-02	5.45E-03	1.56E-02
6.80E-01	3.00E-02	5.78E-03	1.56E-02
6.90E-01	3.00E-02	6.10E-03	1.56E-02
7.00E-01	3.00E-02	6.43E-03	1.56E-02
7.10E-01	3.00E-02	6.75E-03	1.56E-02
7.20E-01	3.00E-02	7.08E-03	1.57E-02
7.30E-01	3.00E-02	7.41E-03	1.57E-02
7.40E-01	3.00E-02	7.75E-03	1.57E-02
7.50E-01	3.00E-02	8.08E-03	1.58E-02
7.60E-01	3.00E-02	8.42E-03	1.58E-02
7.70E-01	3.00E-02	8.76E-03	1.58E-02
7.80E-01	3.00E-02	9.10E-03	1.59E-02
7.90E-01	3.00E-02	9.45E-03	1.59E-02
8.00E-01	3.00E-02	9.80E-03	1.60E-02
8.10E-01	3.00E-02	1.02E-02	1.60E-02
8.20E-01	3.00E-02	1.05E-02	1.61E-02
8.30E-01	3.00E-02	1.09E-02	1.61E-02
8.40E-01	3.00E-02	1.13E-02	1.62E-02
8.50E-01	3.00E-02	1.16E-02	1.63E-02
8.60E-01	3.00E-02	1.20E-02	1.64E-02
8.70E-01	3.00E-02	1.24E-02	1.65E-02
8.80E-01	3.00E-02	1.29E-02	1.66E-02
8.90E-01	3.00E-02	1.33E-02	1.67E-02
9.00E-01	3.00E-02	1.38E-02	1.68E-02
9.10E-01	3.00E-02	1.42E-02	1.70E-02
9.20E-01	3.00E-02	1.48E-02	1.72E-02
9.30E-01	3.00E-02	1.53E-02	1.75E-02
9.40E-01	3.00E-02	1.60E-02	1.78E-02
9.50E-01	3.00E-02	1.67E-02	1.83E-02
9.60E-01	3.00E-02	1.76E-02	1.88E-02
9.70E-01	3.00E-02	1.87E-02	1.96E-02
9.80E-01	3.00E-02	2.03E-02	2.09E-02
9.90E-01	3.00E-02	2.28E-02	2.31E-02

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	4.00E-02	-1.98E-02	2.02E-02
1.00E-02	4.00E-02	-1.94E-02	2.02E-02
2.00E-02	4.00E-02	-1.90E-02	2.02E-02
3.00E-02	4.00E-02	-1.86E-02	2.02E-02
4.00E-02	4.00E-02	-1.82E-02	2.02E-02
5.00E-02	4.00E-02	-1.79E-02	2.02E-02
6.00E-02	4.00E-02	-1.75E-02	2.02E-02
7.00E-02	4.00E-02	-1.71E-02	2.02E-02
8.00E-02	4.00E-02	-1.67E-02	2.02E-02
9.00E-02	4.00E-02	-1.63E-02	2.02E-02
1.00E-01	4.00E-02	-1.59E-02	2.02E-02
1.10E-01	4.00E-02	-1.55E-02	2.03E-02
1.20E-01	4.00E-02	-1.51E-02	2.03E-02
1.30E-01	4.00E-02	-1.47E-02	2.03E-02
1.40E-01	4.00E-02	-1.43E-02	2.03E-02
1.50E-01	4.00E-02	-1.39E-02	2.03E-02
1.60E-01	4.00E-02	-1.35E-02	2.03E-02
1.70E-01	4.00E-02	-1.31E-02	2.03E-02
1.80E-01	4.00E-02	-1.27E-02	2.03E-02
1.90E-01	4.00E-02	-1.24E-02	2.03E-02
2.00E-01	4.00E-02	-1.20E-02	2.03E-02
2.10E-01	4.00E-02	-1.16E-02	2.03E-02
2.20E-01	4.00E-02	-1.12E-02	2.03E-02
2.30E-01	4.00E-02	-1.08E-02	2.03E-02
2.40E-01	4.00E-02	-1.04E-02	2.03E-02
2.50E-01	4.00E-02	-9.97E-03	2.03E-02
2.60E-01	4.00E-02	-9.57E-03	2.03E-02
2.70E-01	4.00E-02	-9.17E-03	2.04E-02
2.80E-01	4.00E-02	-8.77E-03	2.04E-02
2.90E-01	4.00E-02	-8.37E-03	2.04E-02
3.00E-01	4.00E-02	-7.97E-03	2.04E-02
3.10E-01	4.00E-02	-7.56E-03	2.04E-02
3.20E-01	4.00E-02	-7.16E-03	2.04E-02
3.30E-01	4.00E-02	-6.76E-03	2.04E-02
3.40E-01	4.00E-02	-6.36E-03	2.04E-02
3.50E-01	4.00E-02	-5.95E-03	2.04E-02
3.60E-01	4.00E-02	-5.55E-03	2.04E-02
3.70E-01	4.00E-02	-5.14E-03	2.04E-02
3.80E-01	4.00E-02	-4.74E-03	2.04E-02
3.90E-01	4.00E-02	-4.33E-03	2.05E-02
4.00E-01	4.00E-02	-3.92E-03	2.05E-02
4.10E-01	4.00E-02	-3.51E-03	2.05E-02
4.20E-01	4.00E-02	-3.11E-03	2.05E-02
4.30E-01	4.00E-02	-2.70E-03	2.05E-02
4.40E-01	4.00E-02	-2.29E-03	2.05E-02
4.50E-01	4.00E-02	-1.88E-03	2.05E-02
4.60E-01	4.00E-02	-1.47E-03	2.05E-02
4.70E-01	4.00E-02	-1.05E-03	2.06E-02
4.80E-01	4.00E-02	-6.40E-04	2.06E-02
4.90E-01	4.00E-02	-2.27E-04	2.06E-02
5.00E-01	4.00E-02	1.88E-04	2.06E-02
5.10E-01	4.00E-02	6.04E-04	2.06E-02
5.20E-01	4.00E-02	1.02E-03	2.06E-02
5.30E-01	4.00E-02	1.44E-03	2.06E-02
5.40E-01	4.00E-02	1.86E-03	2.07E-02
5.50E-01	4.00E-02	2.28E-03	2.07E-02
5.60E-01	4.00E-02	2.70E-03	2.07E-02
5.70E-01	4.00E-02	3.12E-03	2.07E-02
5.80E-01	4.00E-02	3.54E-03	2.07E-02
5.90E-01	4.00E-02	3.97E-03	2.08E-02
6.00E-01	4.00E-02	4.39E-03	2.08E-02
6.10E-01	4.00E-02	4.82E-03	2.08E-02
6.20E-01	4.00E-02	5.25E-03	2.08E-02
6.30E-01	4.00E-02	5.68E-03	2.09E-02
6.40E-01	4.00E-02	6.11E-03	2.09E-02
6.50E-01	4.00E-02	6.54E-03	2.09E-02
6.60E-01	4.00E-02	6.98E-03	2.09E-02
6.70E-01	4.00E-02	7.42E-03	2.10E-02
6.80E-01	4.00E-02	7.86E-03	2.10E-02
6.90E-01	4.00E-02	8.30E-03	2.11E-02
7.00E-01	4.00E-02	8.74E-03	2.11E-02
7.10E-01	4.00E-02	9.19E-03	2.11E-02
7.20E-01	4.00E-02	9.64E-03	2.12E-02
7.30E-01	4.00E-02	1.01E-02	2.12E-02
7.40E-01	4.00E-02	1.06E-02	2.13E-02
7.50E-01	4.00E-02	1.10E-02	2.13E-02
7.60E-01	4.00E-02	1.15E-02	2.14E-02
7.70E-01	4.00E-02	1.19E-02	2.14E-02
7.80E-01	4.00E-02	1.24E-02	2.15E-02
7.90E-01	4.00E-02	1.29E-02	2.16E-02
8.00E-01	4.00E-02	1.34E-02	2.17E-02
8.10E-01	4.00E-02	1.39E-02	2.17E-02
8.20E-01	4.00E-02	1.44E-02	2.18E-02
8.30E-01	4.00E-02	1.49E-02	2.19E-02
8.40E-01	4.00E-02	1.54E-02	2.21E-02
8.50E-01	4.00E-02	1.60E-02	2.22E-02
8.60E-01	4.00E-02	1.65E-02	2.23E-02
8.70E-01	4.00E-02	1.71E-02	2.25E-02
8.80E-01	4.00E-02	1.77E-02	2.27E-02
8.90E-01	4.00E-02	1.83E-02	2.29E-02
9.00E-01	4.00E-02	1.90E-02	2.31E-02
9.10E-01	4.00E-02	1.97E-02	2.34E-02
9.20E-01	4.00E-02	2.04E-02	2.38E-02
9.30E-01	4.00E-02	2.13E-02	2.42E-02
9.40E-01	4.00E-02	2.22E-02	2.47E-02
9.50E-01	4.00E-02	2.33E-02	2.53E-02
9.60E-01	4.00E-02	2.45E-02	2.62E-02
9.70E-01	4.00E-02	2.61E-02	2.74E-02
9.80E-01	4.00E-02	2.83E-02	2.91E-02
9.90E-01	4.00E-02	3.17E-02	3.21E-02

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	5.00E-02	-2.47E-02	2.53E-02
1.00E-02	5.00E-02	-2.42E-02	2.53E-02
2.00E-02	5.00E-02	-2.37E-02	2.53E-02
3.00E-02	5.00E-02	-2.32E-02	2.53E-02
4.00E-02	5.00E-02	-2.27E-02	2.53E-02
5.00E-02	5.00E-02	-2.23E-02	2.54E-02
6.00E-02	5.00E-02	-2.18E-02	2.54E-02
7.00E-02	5.00E-02	-2.13E-02	2.54E-02
8.00E-02	5.00E-02	-2.08E-02	2.54E-02
9.00E-02	5.00E-02	-2.03E-02	2.54E-02
1.00E-01	5.00E-02	-1.98E-02	2.54E-02
1.10E-01	5.00E-02	-1.93E-02	2.54E-02
1.20E-01	5.00E-02	-1.89E-02	2.54E-0

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	6.00E-02	-2.95E-02	3.05E-02
1.00E-02	6.00E-02	-2.90E-02	3.05E-02
2.00E-02	6.00E-02	-2.84E-02	3.05E-02
3.00E-02	6.00E-02	-2.78E-02	3.05E-02
4.00E-02	6.00E-02	-2.72E-02	3.05E-02
5.00E-02	6.00E-02	-2.67E-02	3.05E-02
6.00E-02	6.00E-02	-2.61E-02	3.05E-02
7.00E-02	6.00E-02	-2.55E-02	3.05E-02
8.00E-02	6.00E-02	-2.49E-02	3.05E-02
9.00E-02	6.00E-02	-2.43E-02	3.06E-02
1.00E-01	6.00E-02	-2.38E-02	3.06E-02
1.10E-01	6.00E-02	-2.32E-02	3.06E-02
1.20E-01	6.00E-02	-2.26E-02	3.06E-02
1.30E-01	6.00E-02	-2.20E-02	3.06E-02
1.40E-01	6.00E-02	-2.14E-02	3.06E-02
1.50E-01	6.00E-02	-2.08E-02	3.06E-02
1.60E-01	6.00E-02	-2.03E-02	3.06E-02
1.70E-01	6.00E-02	-1.97E-02	3.06E-02
1.80E-01	6.00E-02	-1.91E-02	3.07E-02
1.90E-01	6.00E-02	-1.85E-02	3.07E-02
2.00E-01	6.00E-02	-1.79E-02	3.07E-02
2.10E-01	6.00E-02	-1.73E-02	3.07E-02
2.20E-01	6.00E-02	-1.67E-02	3.07E-02
2.30E-01	6.00E-02	-1.61E-02	3.07E-02
2.40E-01	6.00E-02	-1.55E-02	3.07E-02
2.50E-01	6.00E-02	-1.49E-02	3.08E-02
2.60E-01	6.00E-02	-1.43E-02	3.08E-02
2.70E-01	6.00E-02	-1.37E-02	3.08E-02
2.80E-01	6.00E-02	-1.31E-02	3.08E-02
2.90E-01	6.00E-02	-1.25E-02	3.08E-02
3.00E-01	6.00E-02	-1.19E-02	3.08E-02
3.10E-01	6.00E-02	-1.13E-02	3.09E-02
3.20E-01	6.00E-02	-1.07E-02	3.09E-02
3.30E-01	6.00E-02	-1.01E-02	3.09E-02
3.40E-01	6.00E-02	-9.50E-03	3.09E-02
3.50E-01	6.00E-02	-8.89E-03	3.09E-02
3.60E-01	6.00E-02	-8.28E-03	3.10E-02
3.70E-01	6.00E-02	-7.67E-03	3.10E-02
3.80E-01	6.00E-02	-7.06E-03	3.10E-02
3.90E-01	6.00E-02	-6.45E-03	3.10E-02
4.00E-01	6.00E-02	-5.83E-03	3.11E-02
4.10E-01	6.00E-02	-5.21E-03	3.11E-02
4.20E-01	6.00E-02	-4.60E-03	3.11E-02
4.30E-01	6.00E-02	-3.98E-03	3.11E-02
4.40E-01	6.00E-02	-3.35E-03	3.12E-02
4.50E-01	6.00E-02	-2.73E-03	3.12E-02
4.60E-01	6.00E-02	-2.11E-03	3.12E-02
4.70E-01	6.00E-02	-1.48E-03	3.12E-02
4.80E-01	6.00E-02	-8.52E-04	3.13E-02
4.90E-01	6.00E-02	-2.22E-04	3.13E-02
5.00E-01	6.00E-02	4.10E-04	3.13E-02
5.10E-01	6.00E-02	1.04E-03	3.14E-02
5.20E-01	6.00E-02	1.68E-03	3.14E-02
5.30E-01	6.00E-02	2.32E-03	3.14E-02
5.40E-01	6.00E-02	2.96E-03	3.15E-02
5.50E-01	6.00E-02	3.60E-03	3.15E-02
5.60E-01	6.00E-02	4.25E-03	3.16E-02
5.70E-01	6.00E-02	4.89E-03	3.16E-02
5.80E-01	6.00E-02	5.54E-03	3.17E-02
5.90E-01	6.00E-02	6.20E-03	3.17E-02
6.00E-01	6.00E-02	6.85E-03	3.17E-02
6.10E-01	6.00E-02	7.51E-03	3.18E-02
6.20E-01	6.00E-02	8.17E-03	3.19E-02
6.30E-01	6.00E-02	8.84E-03	3.19E-02
6.40E-01	6.00E-02	9.51E-03	3.20E-02
6.50E-01	6.00E-02	1.02E-02	3.20E-02
6.60E-01	6.00E-02	1.09E-02	3.21E-02
6.70E-01	6.00E-02	1.15E-02	3.22E-02
6.80E-01	6.00E-02	1.22E-02	3.22E-02
6.90E-01	6.00E-02	1.29E-02	3.23E-02
7.00E-01	6.00E-02	1.36E-02	3.24E-02
7.10E-01	6.00E-02	1.43E-02	3.25E-02
7.20E-01	6.00E-02	1.50E-02	3.26E-02
7.30E-01	6.00E-02	1.57E-02	3.27E-02
7.40E-01	6.00E-02	1.65E-02	3.28E-02
7.50E-01	6.00E-02	1.72E-02	3.29E-02
7.60E-01	6.00E-02	1.79E-02	3.30E-02
7.70E-01	6.00E-02	1.87E-02	3.31E-02
7.80E-01	6.00E-02	1.94E-02	3.33E-02
7.90E-01	6.00E-02	2.02E-02	3.34E-02
8.00E-01	6.00E-02	2.10E-02	3.36E-02
8.10E-01	6.00E-02	2.18E-02	3.38E-02
8.20E-01	6.00E-02	2.26E-02	3.40E-02
8.30E-01	6.00E-02	2.34E-02	3.42E-02
8.40E-01	6.00E-02	2.43E-02	3.44E-02
8.50E-01	6.00E-02	2.52E-02	3.47E-02
8.60E-01	6.00E-02	2.61E-02	3.50E-02
8.70E-01	6.00E-02	2.70E-02	3.53E-02
8.80E-01	6.00E-02	2.80E-02	3.56E-02
8.90E-01	6.00E-02	2.91E-02	3.60E-02
9.00E-01	6.00E-02	3.02E-02	3.65E-02
9.10E-01	6.00E-02	3.13E-02	3.70E-02
9.20E-01	6.00E-02	3.26E-02	3.77E-02
9.30E-01	6.00E-02	3.40E-02	3.84E-02
9.40E-01	6.00E-02	3.55E-02	3.93E-02
9.50E-01	6.00E-02	3.73E-02	4.05E-02
9.60E-01	6.00E-02	3.93E-02	4.19E-02
9.70E-01	6.00E-02	4.19E-02	4.38E-02
9.80E-01	6.00E-02	4.52E-02	4.64E-02
9.90E-01	6.00E-02	4.99E-02	5.06E-02

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	7.00E-02	-3.44E-02	3.56E-02
1.00E-02	7.00E-02	-3.37E-02	3.56E-02
2.00E-02	7.00E-02	-3.30E-02	3.57E-02
3.00E-02	7.00E-02	-3.24E-02	3.57E-02
4.00E-02	7.00E-02	-3.17E-02	3.57E-02
5.00E-02	7.00E-02	-3.10E-02	3.57E-02
6.00E-02	7.00E-02	-3.04E-02	3.57E-02
7.00E-02	7.00E-02	-2.97E-02	3.57E-02
8.00E-02	7.00E-02	-2.90E-02	3.57E-02
9.00E-02	7.00E-02	-2.83E-02	3.58E-02
1.00E-01	7.00E-02	-2.77E-02	3.58E-02
1.10E-01	7.00E-02	-2.70E-02	3.58E-02
1.20E-01	7.00E-02	-2.63E-02	3.58E-02
1.30E-01	7.00E-02	-2.56E-02	3.58E-02
1.40E-01	7.00E-02	-2.50E-02	3.58E-02
1.50E-01	7.00E-02	-2.43E-02	3.59E-02
1.60E-01	7.00E-02	-2.36E-02	3.59E-02
1.70E-01	7.00E-02	-2.29E-02	3.59E-02
1.80E-01	7.00E-02	-2.22E-02	3.59E-02
1.90E-01	7.00E-02	-2.15E-02	3.59E-02
2.00E-01	7.00E-02	-2.09E-02	3.59E-02
2.10E-01	7.00E-02	-2.02E-02	3.60E-02
2.20E-01	7.00E-02	-1.95E-02	3.60E-02
2.30E-01	7.00E-02	-1.88E-02	3.60E-02
2.40E-01	7.00E-02	-1.81E-02	3.60E-02
2.50E-01	7.00E-02	-1.74E-02	3.60E-02
2.60E-01	7.00E-02	-1.67E-02	3.61E-02
2.70E-01	7.00E-02	-1.60E-02	3.61E-02
2.80E-01	7.00E-02	-1.53E-02	3.61E-02
2.90E-01	7.00E-02	-1.46E-02	3.61E-02
3.00E-01	7.00E-02	-1.39E-02	3.62E-02
3.10E-01	7.00E-02	-1.32E-02	3.62E-02
3.20E-01	7.00E-02	-1.25E-02	3.62E-02
3.30E-01	7.00E-02	-1.18E-02	3.62E-02
3.40E-01	7.00E-02	-1.11E-02	3.63E-02
3.50E-01	7.00E-02	-1.04E-02	3.63E-02
3.60E-01	7.00E-02	-9.64E-03	3.63E-02
3.70E-01	7.00E-02	-8.93E-03	3.63E-02
3.80E-01	7.00E-02	-8.21E-03	3.64E-02
3.90E-01	7.00E-02	-7.49E-03	3.64E-02
4.00E-01	7.00E-02	-6.77E-03	3.64E-02
4.10E-01	7.00E-02	-6.05E-03	3.65E-02
4.20E-01	7.00E-02	-5.33E-03	3.65E-02
4.30E-01	7.00E-02	-4.60E-03	3.65E-02
4.40E-01	7.00E-02	-3.87E-03	3.66E-02
4.50E-01	7.00E-02	-3.14E-03	3.66E-02
4.60E-01	7.00E-02	-2.41E-03	3.66E-02
4.70E-01	7.00E-02	-1.67E-03	3.67E-02
4.80E-01	7.00E-02	-9.34E-04	3.67E-02
4.90E-01	7.00E-02	-1.94E-04	3.68E-02
5.00E-01	7.00E-02	5.49E-04	3.68E-02
5.10E-01	7.00E-02	1.29E-03	3.69E-02
5.20E-01	7.00E-02	2.04E-03	3.69E-02
5.30E-01	7.00E-02	2.79E-03	3.70E-02
5.40E-01	7.00E-02	3.55E-03	3.70E-02
5.50E-01	7.00E-02	4.31E-03	3.71E-02
5.60E-01	7.00E-02	5.07E-03	3.71E-02
5.70E-01	7.00E-02	5.83E-03	3.72E-02
5.80E-01	7.00E-02	6.60E-03	3.72E-02
5.90E-01	7.00E-02	7.37E-03	3.73E-02
6.00E-01	7.00E-02	8.14E-03	3.74E-02
6.10E-01	7.00E-02	8.92E-03	3.74E-02
6.20E-01	7.00E-02	9.71E-03	3.75E-02
6.30E-01	7.00E-02	1.05E-02	3.76E-02
6.40E-01	7.00E-02	1.13E-02	3.77E-02
6.50E-01	7.00E-02	1.21E-02	3.78E-02
6.60E-01	7.00E-02	1.29E-02	3.78E-02
6.70E-01	7.00E-02	1.37E-02	3.79E-02
6.80E-01	7.00E-02	1.45E-02	3.80E-02
6.90E-01	7.00E-02	1.53E-02	3.81E-02
7.00E-01	7.00E-02	1.62E-02	3.82E-02
7.10E-01	7.00E-02	1.70E-02	3.84E-02
7.20E-01	7.00E-02	1.78E-02	3.85E-02
7.30E-01	7.00E-02	1.87E-02	3.86E-02
7.40E-01	7.00E-02	1.96E-02	3.87E-02
7.50E-01	7.00E-02	2.04E-02	3.89E-02
7.60E-01	7.00E-02	2.13E-02	3.91E-02
7.70E-01	7.00E-02	2.22E-02	3.92E-02
7.80E-01	7.00E-02	2.31E-02	3.94E-02
7.90E-01	7.00E-02	2.40E-02	3.96E-02
8.00E-01	7.00E-02	2.50E-02	3.98E-02
8.10E-01	7.00E-02	2.59E-02	4.00E-02
8.20E-01	7.00E-02	2.69E-02	4.03E-02
8.30E-01	7.00E-02	2.79E-02	4.06E-02
8.40E-01	7.00E-02	2.90E-02	4.09E-02
8.50E-01	7.00E-02	3.00E-02	4.12E-02
8.60E-01	7.00E-02	3.11E-02	4.16E-02
8.70E-01	7.00E-02	3.23E-02	4.20E-02
8.80E-01	7.00E-02	3.35E-02	4.24E-02
8.90E-01	7.00E-02	3.47E-02	4.29E-02
9.00E-01	7.00E-02	3.61E-02	4.35E-02
9.10E-01	7.00E-02	3.75E-02	4.42E-02
9.20E-01	7.00E-02	3.90E-02	4.50E-02
9.30E-01	7.00E-02	4.07E-02	4.59E-02
9.40E-01	7.00E-02	4.25E-02	4.70E-02
9.50E-01	7.00E-02	4.46E-02	4.84E-02
9.60E-01	7.00E-02	4.71E-02	5.01E-02
9.70E-01	7.00E-02	5.01E-02	5.23E-02
9.80E-01	7.00E-02	5.39E-02	5.54E-02
9.90E-01	7.00E-02	5.92E-02	6.00E-02

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	8.00E-02	-3.92E-02	4.08E-02
1.00E-02	8.00E-02	-3.84E-02	4.09E-02
2.00E-02	8.00E-02	-3.77E-02	4.09E-02
3.00E-02	8.00E-02	-3.69E-02	4.09E-02
4.00E-02	8.00E-02	-3.61E-02	4.09E-02
5.00E-02	8.00E-02	-3.54E-02	4.09E-02
6.00E-02	8.00E-02	-3.46E-02	4.09E-02
7.00E-02	8.00E-02	-3.39E-02	4.10E-02
8.00E-02	8.00E-02	-3.31E-02	4.10E-02
9.00E-02	8.00E-02	-3.23E-02	4.10E-02
1.00E-01	8.00E-02	-3.16E-02	4.10E-02
1.10E-01	8.00E-02	-3.08E-02	4.10E-02
1.20E-01	8.00E-02	-3.00E-02	4.11E

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	9.00E-02	-4.39E-02	4.61E-02
1.00E-02	9.00E-02	-4.31E-02	4.61E-02
2.00E-02	9.00E-02	-4.23E-02	4.61E-02
3.00E-02	9.00E-02	-4.14E-02	4.61E-02
4.00E-02	9.00E-02	-4.06E-02	4.61E-02
5.00E-02	9.00E-02	-3.97E-02	4.62E-02
6.00E-02	9.00E-02	-3.89E-02	4.62E-02
7.00E-02	9.00E-02	-3.80E-02	4.62E-02
8.00E-02	9.00E-02	-3.72E-02	4.62E-02
9.00E-02	9.00E-02	-3.63E-02	4.63E-02
1.00E-01	9.00E-02	-3.54E-02	4.63E-02
1.10E-01	9.00E-02	-3.46E-02	4.63E-02
1.20E-01	9.00E-02	-3.37E-02	4.63E-02
1.30E-01	9.00E-02	-3.29E-02	4.64E-02
1.40E-01	9.00E-02	-3.20E-02	4.64E-02
1.50E-01	9.00E-02	-3.11E-02	4.64E-02
1.60E-01	9.00E-02	-3.03E-02	4.64E-02
1.70E-01	9.00E-02	-2.94E-02	4.65E-02
1.80E-01	9.00E-02	-2.85E-02	4.65E-02
1.90E-01	9.00E-02	-2.76E-02	4.65E-02
2.00E-01	9.00E-02	-2.68E-02	4.66E-02
2.10E-01	9.00E-02	-2.59E-02	4.66E-02
2.20E-01	9.00E-02	-2.50E-02	4.66E-02
2.30E-01	9.00E-02	-2.41E-02	4.67E-02
2.40E-01	9.00E-02	-2.32E-02	4.67E-02
2.50E-01	9.00E-02	-2.23E-02	4.67E-02
2.60E-01	9.00E-02	-2.14E-02	4.68E-02
2.70E-01	9.00E-02	-2.05E-02	4.68E-02
2.80E-01	9.00E-02	-1.96E-02	4.68E-02
2.90E-01	9.00E-02	-1.87E-02	4.69E-02
3.00E-01	9.00E-02	-1.78E-02	4.69E-02
3.10E-01	9.00E-02	-1.69E-02	4.70E-02
3.20E-01	9.00E-02	-1.60E-02	4.70E-02
3.30E-01	9.00E-02	-1.51E-02	4.70E-02
3.40E-01	9.00E-02	-1.42E-02	4.71E-02
3.50E-01	9.00E-02	-1.33E-02	4.71E-02
3.60E-01	9.00E-02	-1.23E-02	4.72E-02
3.70E-01	9.00E-02	-1.14E-02	4.72E-02
3.80E-01	9.00E-02	-1.05E-02	4.73E-02
3.90E-01	9.00E-02	-9.57E-03	4.73E-02
4.00E-01	9.00E-02	-8.64E-03	4.74E-02
4.10E-01	9.00E-02	-7.70E-03	4.74E-02
4.20E-01	9.00E-02	-6.76E-03	4.75E-02
4.30E-01	9.00E-02	-5.82E-03	4.75E-02
4.40E-01	9.00E-02	-4.88E-03	4.76E-02
4.50E-01	9.00E-02	-3.93E-03	4.77E-02
4.60E-01	9.00E-02	-2.97E-03	4.77E-02
4.70E-01	9.00E-02	-2.02E-03	4.78E-02
4.80E-01	9.00E-02	-1.06E-03	4.79E-02
4.90E-01	9.00E-02	-9.10E-05	4.79E-02
5.00E-01	9.00E-02	8.78E-04	4.80E-02
5.10E-01	9.00E-02	1.85E-03	4.81E-02
5.20E-01	9.00E-02	2.83E-03	4.81E-02
5.30E-01	9.00E-02	3.81E-03	4.82E-02
5.40E-01	9.00E-02	4.80E-03	4.83E-02
5.50E-01	9.00E-02	5.79E-03	4.84E-02
5.60E-01	9.00E-02	6.79E-03	4.85E-02
5.70E-01	9.00E-02	7.79E-03	4.86E-02
5.80E-01	9.00E-02	8.80E-03	4.87E-02
5.90E-01	9.00E-02	9.81E-03	4.88E-02
6.00E-01	9.00E-02	1.08E-02	4.89E-02
6.10E-01	9.00E-02	1.19E-02	4.90E-02
6.20E-01	9.00E-02	1.29E-02	4.91E-02
6.30E-01	9.00E-02	1.39E-02	4.92E-02
6.40E-01	9.00E-02	1.50E-02	4.94E-02
6.50E-01	9.00E-02	1.60E-02	4.95E-02
6.60E-01	9.00E-02	1.71E-02	4.96E-02
6.70E-01	9.00E-02	1.82E-02	4.98E-02
6.80E-01	9.00E-02	1.93E-02	4.99E-02
6.90E-01	9.00E-02	2.03E-02	5.01E-02
7.00E-01	9.00E-02	2.14E-02	5.03E-02
7.10E-01	9.00E-02	2.26E-02	5.04E-02
7.20E-01	9.00E-02	2.37E-02	5.06E-02
7.30E-01	9.00E-02	2.48E-02	5.08E-02
7.40E-01	9.00E-02	2.60E-02	5.11E-02
7.50E-01	9.00E-02	2.72E-02	5.13E-02
7.60E-01	9.00E-02	2.83E-02	5.15E-02
7.70E-01	9.00E-02	2.95E-02	5.18E-02
7.80E-01	9.00E-02	3.08E-02	5.21E-02
7.90E-01	9.00E-02	3.20E-02	5.24E-02
8.00E-01	9.00E-02	3.33E-02	5.27E-02
8.10E-01	9.00E-02	3.46E-02	5.30E-02
8.20E-01	9.00E-02	3.59E-02	5.34E-02
8.30E-01	9.00E-02	3.73E-02	5.38E-02
8.40E-01	9.00E-02	3.87E-02	5.43E-02
8.50E-01	9.00E-02	4.02E-02	5.48E-02
8.60E-01	9.00E-02	4.17E-02	5.53E-02
8.70E-01	9.00E-02	4.32E-02	5.59E-02
8.80E-01	9.00E-02	4.49E-02	5.66E-02
8.90E-01	9.00E-02	4.66E-02	5.73E-02
9.00E-01	9.00E-02	4.84E-02	5.82E-02
9.10E-01	9.00E-02	5.03E-02	5.91E-02
9.20E-01	9.00E-02	5.24E-02	6.02E-02
9.30E-01	9.00E-02	5.46E-02	6.15E-02
9.40E-01	9.00E-02	5.71E-02	6.30E-02
9.50E-01	9.00E-02	5.99E-02	6.48E-02
9.60E-01	9.00E-02	6.31E-02	6.71E-02
9.70E-01	9.00E-02	6.69E-02	6.99E-02
9.80E-01	9.00E-02	7.17E-02	7.36E-02
9.90E-01	9.00E-02	7.81E-02	7.91E-02

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	1.00E-01	-4.87E-02	5.13E-02
1.00E-02	1.00E-01	-4.78E-02	5.13E-02
2.00E-02	1.00E-01	-4.68E-02	5.14E-02
3.00E-02	1.00E-01	-4.59E-02	5.14E-02
4.00E-02	1.00E-01	-4.50E-02	5.14E-02
5.00E-02	1.00E-01	-4.40E-02	5.15E-02
6.00E-02	1.00E-01	-4.31E-02	5.15E-02
7.00E-02	1.00E-01	-4.21E-02	5.15E-02
8.00E-02	1.00E-01	-4.12E-02	5.15E-02
9.00E-02	1.00E-01	-4.03E-02	5.16E-02
1.00E-01	1.00E-01	-3.93E-02	5.16E-02
1.10E-01	1.00E-01	-3.84E-02	5.16E-02
1.20E-01	1.00E-01	-3.74E-02	5.17E-02
1.30E-01	1.00E-01	-3.65E-02	5.17E-02
1.40E-01	1.00E-01	-3.55E-02	5.17E-02
1.50E-01	1.00E-01	-3.45E-02	5.18E-02
1.60E-01	1.00E-01	-3.36E-02	5.18E-02
1.70E-01	1.00E-01	-3.26E-02	5.18E-02
1.80E-01	1.00E-01	-3.16E-02	5.19E-02
1.90E-01	1.00E-01	-3.07E-02	5.19E-02
2.00E-01	1.00E-01	-2.97E-02	5.19E-02
2.10E-01	1.00E-01	-2.87E-02	5.20E-02
2.20E-01	1.00E-01	-2.77E-02	5.20E-02
2.30E-01	1.00E-01	-2.68E-02	5.21E-02
2.40E-01	1.00E-01	-2.58E-02	5.21E-02
2.50E-01	1.00E-01	-2.48E-02	5.21E-02
2.60E-01	1.00E-01	-2.38E-02	5.22E-02
2.70E-01	1.00E-01	-2.28E-02	5.22E-02
2.80E-01	1.00E-01	-2.18E-02	5.23E-02
2.90E-01	1.00E-01	-2.08E-02	5.23E-02
3.00E-01	1.00E-01	-1.98E-02	5.24E-02
3.10E-01	1.00E-01	-1.88E-02	5.24E-02
3.20E-01	1.00E-01	-1.78E-02	5.25E-02
3.30E-01	1.00E-01	-1.68E-02	5.25E-02
3.40E-01	1.00E-01	-1.57E-02	5.26E-02
3.50E-01	1.00E-01	-1.47E-02	5.26E-02
3.60E-01	1.00E-01	-1.37E-02	5.27E-02
3.70E-01	1.00E-01	-1.27E-02	5.28E-02
3.80E-01	1.00E-01	-1.16E-02	5.28E-02
3.90E-01	1.00E-01	-1.06E-02	5.29E-02
4.00E-01	1.00E-01	-9.56E-03	5.29E-02
4.10E-01	1.00E-01	-8.52E-03	5.30E-02
4.20E-01	1.00E-01	-7.47E-03	5.31E-02
4.30E-01	1.00E-01	-6.42E-03	5.31E-02
4.40E-01	1.00E-01	-5.36E-03	5.32E-02
4.50E-01	1.00E-01	-4.30E-03	5.33E-02
4.60E-01	1.00E-01	-3.24E-03	5.34E-02
4.70E-01	1.00E-01	-2.17E-03	5.34E-02
4.80E-01	1.00E-01	-1.10E-03	5.35E-02
4.90E-01	1.00E-01	-1.81E-05	5.36E-02
5.00E-01	1.00E-01	1.07E-03	5.37E-02
5.10E-01	1.00E-01	2.15E-03	5.38E-02
5.20E-01	1.00E-01	3.25E-03	5.39E-02
5.30E-01	1.00E-01	4.35E-03	5.40E-02
5.40E-01	1.00E-01	5.46E-03	5.41E-02
5.50E-01	1.00E-01	6.57E-03	5.42E-02
5.60E-01	1.00E-01	7.69E-03	5.43E-02
5.70E-01	1.00E-01	8.81E-03	5.44E-02
5.80E-01	1.00E-01	9.94E-03	5.45E-02
5.90E-01	1.00E-01	1.11E-02	5.47E-02
6.00E-01	1.00E-01	1.22E-02	5.48E-02
6.10E-01	1.00E-01	1.34E-02	5.49E-02
6.20E-01	1.00E-01	1.45E-02	5.51E-02
6.30E-01	1.00E-01	1.57E-02	5.52E-02
6.40E-01	1.00E-01	1.69E-02	5.54E-02
6.50E-01	1.00E-01	1.81E-02	5.55E-02
6.60E-01	1.00E-01	1.93E-02	5.57E-02
6.70E-01	1.00E-01	2.05E-02	5.59E-02
6.80E-01	1.00E-01	2.17E-02	5.60E-02
6.90E-01	1.00E-01	2.29E-02	5.62E-02
7.00E-01	1.00E-01	2.42E-02	5.64E-02
7.10E-01	1.00E-01	2.54E-02	5.67E-02
7.20E-01	1.00E-01	2.67E-02	5.69E-02
7.30E-01	1.00E-01	2.80E-02	5.71E-02
7.40E-01	1.00E-01	2.93E-02	5.74E-02
7.50E-01	1.00E-01	3.06E-02	5.77E-02
7.60E-01	1.00E-01	3.20E-02	5.80E-02
7.70E-01	1.00E-01	3.34E-02	5.83E-02
7.80E-01	1.00E-01	3.47E-02	5.86E-02
7.90E-01	1.00E-01	3.62E-02	5.90E-02
8.00E-01	1.00E-01	3.76E-02	5.93E-02
8.10E-01	1.00E-01	3.91E-02	5.98E-02
8.20E-01	1.00E-01	4.06E-02	6.02E-02
8.30E-01	1.00E-01	4.22E-02	6.07E-02
8.40E-01	1.00E-01	4.38E-02	6.12E-02
8.50E-01	1.00E-01	4.54E-02	6.18E-02
8.60E-01	1.00E-01	4.71E-02	6.24E-02
8.70E-01	1.00E-01	4.89E-02	6.31E-02
8.80E-01	1.00E-01	5.07E-02	6.39E-02
8.90E-01	1.00E-01	5.27E-02	6.48E-02
9.00E-01	1.00E-01	5.48E-02	6.57E-02
9.10E-01	1.00E-01	5.69E-02	6.68E-02
9.20E-01	1.00E-01	5.93E-02	6.81E-02
9.30E-01	1.00E-01	6.18E-02	6.96E-02
9.40E-01	1.00E-01	6.46E-02	7.13E-02
9.50E-01	1.00E-01	6.78E-02	7.33E-02
9.60E-01	1.00E-01	7.13E-02	7.58E-02
9.70E-01	1.00E-01	7.55E-02	7.89E-02
9.80E-01	1.00E-01	8.07E-02	8.29E-02
9.90E-01	1.00E-01	8.76E-02	8.87E-02

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	1.10E-01	-5.34E-02	5.66E-02
1.00E-02	1.10E-01	-5.24E-02	5.66E-02
2.00E-02	1.10E-01	-5.14E-02	5.67E-02
3.00E-02	1.10E-01	-5.04E-02	5.67E-02
4.00E-02	1.10E-01	-4.93E-02	5.67E-02
5.00E-02	1.10E-01	-4.83E-02	5.68E-02
6.00E-02	1.10E-01	-4.73E-02	5.68E-02
7.00E-02	1.10E-01	-4.63E-02	5.68E-02
8.00E-02	1.10E-01	-4.52E-02	5.69E-02
9.00E-02	1.10E-01	-4.42E-02	5.69E-02
1.00E-01	1.10E-01	-4.32E-02	5.69E-02
1.10E-01	1.10E-01	-4.21E-02	5.70E-02
1.20E-01	1.10E-01	-4.11E-02	5.70E-0

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	1.20E-01	-5.81E-02	6.19E-02
1.00E-02	1.20E-01	-5.70E-02	6.20E-02
2.00E-02	1.20E-01	-5.59E-02	6.20E-02
3.00E-02	1.20E-01	-5.48E-02	6.20E-02
4.00E-02	1.20E-01	-5.37E-02	6.21E-02
5.00E-02	1.20E-01	-5.26E-02	6.21E-02
6.00E-02	1.20E-01	-5.15E-02	6.22E-02
7.00E-02	1.20E-01	-5.04E-02	6.22E-02
8.00E-02	1.20E-01	-4.92E-02	6.22E-02
9.00E-02	1.20E-01	-4.81E-02	6.23E-02
1.00E-01	1.20E-01	-4.70E-02	6.23E-02
1.10E-01	1.20E-01	-4.59E-02	6.24E-02
1.20E-01	1.20E-01	-4.47E-02	6.24E-02
1.30E-01	1.20E-01	-4.36E-02	6.25E-02
1.40E-01	1.20E-01	-4.25E-02	6.25E-02
1.50E-01	1.20E-01	-4.13E-02	6.26E-02
1.60E-01	1.20E-01	-4.02E-02	6.26E-02
1.70E-01	1.20E-01	-3.90E-02	6.27E-02
1.80E-01	1.20E-01	-3.79E-02	6.27E-02
1.90E-01	1.20E-01	-3.67E-02	6.28E-02
2.00E-01	1.20E-01	-3.55E-02	6.28E-02
2.10E-01	1.20E-01	-3.44E-02	6.29E-02
2.20E-01	1.20E-01	-3.32E-02	6.29E-02
2.30E-01	1.20E-01	-3.20E-02	6.30E-02
2.40E-01	1.20E-01	-3.09E-02	6.30E-02
2.50E-01	1.20E-01	-2.97E-02	6.31E-02
2.60E-01	1.20E-01	-2.85E-02	6.32E-02
2.70E-01	1.20E-01	-2.73E-02	6.32E-02
2.80E-01	1.20E-01	-2.61E-02	6.33E-02
2.90E-01	1.20E-01	-2.49E-02	6.34E-02
3.00E-01	1.20E-01	-2.37E-02	6.34E-02
3.10E-01	1.20E-01	-2.25E-02	6.35E-02
3.20E-01	1.20E-01	-2.13E-02	6.36E-02
3.30E-01	1.20E-01	-2.01E-02	6.37E-02
3.40E-01	1.20E-01	-1.88E-02	6.37E-02
3.50E-01	1.20E-01	-1.76E-02	6.38E-02
3.60E-01	1.20E-01	-1.64E-02	6.39E-02
3.70E-01	1.20E-01	-1.51E-02	6.40E-02
3.80E-01	1.20E-01	-1.39E-02	6.41E-02
3.90E-01	1.20E-01	-1.26E-02	6.41E-02
4.00E-01	1.20E-01	-1.14E-02	6.42E-02
4.10E-01	1.20E-01	-1.01E-02	6.43E-02
4.20E-01	1.20E-01	-8.87E-03	6.44E-02
4.30E-01	1.20E-01	-7.59E-03	6.45E-02
4.40E-01	1.20E-01	-6.32E-03	6.46E-02
4.50E-01	1.20E-01	-5.03E-03	6.47E-02
4.60E-01	1.20E-01	-3.74E-03	6.48E-02
4.70E-01	1.20E-01	-2.45E-03	6.50E-02
4.80E-01	1.20E-01	-1.14E-03	6.51E-02
4.90E-01	1.20E-01	1.65E-04	6.52E-02
5.00E-01	1.20E-01	1.48E-03	6.53E-02
5.10E-01	1.20E-01	2.81E-03	6.54E-02
5.20E-01	1.20E-01	4.14E-03	6.56E-02
5.30E-01	1.20E-01	5.48E-03	6.57E-02
5.40E-01	1.20E-01	6.83E-03	6.59E-02
5.50E-01	1.20E-01	8.18E-03	6.60E-02
5.60E-01	1.20E-01	9.55E-03	6.62E-02
5.70E-01	1.20E-01	1.09E-02	6.63E-02
5.80E-01	1.20E-01	1.23E-02	6.65E-02
5.90E-01	1.20E-01	1.37E-02	6.66E-02
6.00E-01	1.20E-01	1.51E-02	6.68E-02
6.10E-01	1.20E-01	1.65E-02	6.70E-02
6.20E-01	1.20E-01	1.79E-02	6.72E-02
6.30E-01	1.20E-01	1.94E-02	6.74E-02
6.40E-01	1.20E-01	2.08E-02	6.76E-02
6.50E-01	1.20E-01	2.23E-02	6.78E-02
6.60E-01	1.20E-01	2.38E-02	6.81E-02
6.70E-01	1.20E-01	2.53E-02	6.83E-02
6.80E-01	1.20E-01	2.68E-02	6.86E-02
6.90E-01	1.20E-01	2.83E-02	6.88E-02
7.00E-01	1.20E-01	2.98E-02	6.91E-02
7.10E-01	1.20E-01	3.14E-02	6.94E-02
7.20E-01	1.20E-01	3.30E-02	6.97E-02
7.30E-01	1.20E-01	3.46E-02	7.01E-02
7.40E-01	1.20E-01	3.62E-02	7.04E-02
7.50E-01	1.20E-01	3.78E-02	7.08E-02
7.60E-01	1.20E-01	3.95E-02	7.12E-02
7.70E-01	1.20E-01	4.12E-02	7.16E-02
7.80E-01	1.20E-01	4.29E-02	7.21E-02
7.90E-01	1.20E-01	4.47E-02	7.25E-02
8.00E-01	1.20E-01	4.65E-02	7.30E-02
8.10E-01	1.20E-01	4.83E-02	7.36E-02
8.20E-01	1.20E-01	5.02E-02	7.42E-02
8.30E-01	1.20E-01	5.22E-02	7.48E-02
8.40E-01	1.20E-01	5.42E-02	7.55E-02
8.50E-01	1.20E-01	5.62E-02	7.63E-02
8.60E-01	1.20E-01	5.84E-02	7.71E-02
8.70E-01	1.20E-01	6.06E-02	7.80E-02
8.80E-01	1.20E-01	6.29E-02	7.90E-02
8.90E-01	1.20E-01	6.53E-02	8.01E-02
9.00E-01	1.20E-01	6.79E-02	8.13E-02
9.10E-01	1.20E-01	7.06E-02	8.27E-02
9.20E-01	1.20E-01	7.35E-02	8.43E-02
9.30E-01	1.20E-01	7.66E-02	8.61E-02
9.40E-01	1.20E-01	8.00E-02	8.81E-02
9.50E-01	1.20E-01	8.38E-02	9.06E-02
9.60E-01	1.20E-01	8.81E-02	9.35E-02
9.70E-01	1.20E-01	9.30E-02	9.71E-02
9.80E-01	1.20E-01	9.90E-02	1.02E-01
9.90E-01	1.20E-01	1.07E-01	1.08E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	1.30E-01	-6.27E-02	6.73E-02
1.00E-02	1.30E-01	-6.16E-02	6.73E-02
2.00E-02	1.30E-01	-6.04E-02	6.74E-02
3.00E-02	1.30E-01	-5.92E-02	6.74E-02
4.00E-02	1.30E-01	-5.80E-02	6.74E-02
5.00E-02	1.30E-01	-5.68E-02	6.75E-02
6.00E-02	1.30E-01	-5.56E-02	6.75E-02
7.00E-02	1.30E-01	-5.44E-02	6.76E-02
8.00E-02	1.30E-01	-5.32E-02	6.76E-02
9.00E-02	1.30E-01	-5.20E-02	6.77E-02
1.00E-01	1.30E-01	-5.08E-02	6.77E-02
1.10E-01	1.30E-01	-4.96E-02	6.78E-02
1.20E-01	1.30E-01	-4.84E-02	6.78E-02
1.30E-01	1.30E-01	-4.71E-02	6.79E-02
1.40E-01	1.30E-01	-4.59E-02	6.80E-02
1.50E-01	1.30E-01	-4.47E-02	6.80E-02
1.60E-01	1.30E-01	-4.34E-02	6.81E-02
1.70E-01	1.30E-01	-4.22E-02	6.81E-02
1.80E-01	1.30E-01	-4.10E-02	6.82E-02
1.90E-01	1.30E-01	-3.97E-02	6.83E-02
2.00E-01	1.30E-01	-3.85E-02	6.83E-02
2.10E-01	1.30E-01	-3.72E-02	6.84E-02
2.20E-01	1.30E-01	-3.59E-02	6.85E-02
2.30E-01	1.30E-01	-3.47E-02	6.85E-02
2.40E-01	1.30E-01	-3.34E-02	6.86E-02
2.50E-01	1.30E-01	-3.21E-02	6.87E-02
2.60E-01	1.30E-01	-3.08E-02	6.87E-02
2.70E-01	1.30E-01	-2.95E-02	6.88E-02
2.80E-01	1.30E-01	-2.83E-02	6.89E-02
2.90E-01	1.30E-01	-2.70E-02	6.90E-02
3.00E-01	1.30E-01	-2.56E-02	6.90E-02
3.10E-01	1.30E-01	-2.43E-02	6.91E-02
3.20E-01	1.30E-01	-2.30E-02	6.92E-02
3.30E-01	1.30E-01	-2.17E-02	6.93E-02
3.40E-01	1.30E-01	-2.04E-02	6.94E-02
3.50E-01	1.30E-01	-1.90E-02	6.95E-02
3.60E-01	1.30E-01	-1.77E-02	6.96E-02
3.70E-01	1.30E-01	-1.64E-02	6.97E-02
3.80E-01	1.30E-01	-1.50E-02	6.98E-02
3.90E-01	1.30E-01	-1.37E-02	6.99E-02
4.00E-01	1.30E-01	-1.23E-02	7.00E-02
4.10E-01	1.30E-01	-1.09E-02	7.01E-02
4.20E-01	1.30E-01	-9.55E-03	7.02E-02
4.30E-01	1.30E-01	-8.17E-03	7.03E-02
4.40E-01	1.30E-01	-6.78E-03	7.04E-02
4.50E-01	1.30E-01	-5.39E-03	7.06E-02
4.60E-01	1.30E-01	-3.98E-03	7.07E-02
4.70E-01	1.30E-01	-2.57E-03	7.08E-02
4.80E-01	1.30E-01	-1.15E-03	7.09E-02
4.90E-01	1.30E-01	2.74E-04	7.11E-02
5.00E-01	1.30E-01	1.71E-03	7.12E-02
5.10E-01	1.30E-01	3.15E-03	7.14E-02
5.20E-01	1.30E-01	4.61E-03	7.15E-02
5.30E-01	1.30E-01	6.07E-03	7.17E-02
5.40E-01	1.30E-01	7.54E-03	7.19E-02
5.50E-01	1.30E-01	9.02E-03	7.20E-02
5.60E-01	1.30E-01	1.05E-02	7.22E-02
5.70E-01	1.30E-01	1.20E-02	7.24E-02
5.80E-01	1.30E-01	1.35E-02	7.26E-02
5.90E-01	1.30E-01	1.50E-02	7.28E-02
6.00E-01	1.30E-01	1.66E-02	7.30E-02
6.10E-01	1.30E-01	1.81E-02	7.32E-02
6.20E-01	1.30E-01	1.97E-02	7.34E-02
6.30E-01	1.30E-01	2.13E-02	7.37E-02
6.40E-01	1.30E-01	2.28E-02	7.39E-02
6.50E-01	1.30E-01	2.45E-02	7.42E-02
6.60E-01	1.30E-01	2.61E-02	7.44E-02
6.70E-01	1.30E-01	2.77E-02	7.47E-02
6.80E-01	1.30E-01	2.94E-02	7.50E-02
6.90E-01	1.30E-01	3.10E-02	7.53E-02
7.00E-01	1.30E-01	3.27E-02	7.56E-02
7.10E-01	1.30E-01	3.44E-02	7.60E-02
7.20E-01	1.30E-01	3.62E-02	7.63E-02
7.30E-01	1.30E-01	3.79E-02	7.67E-02
7.40E-01	1.30E-01	3.97E-02	7.71E-02
7.50E-01	1.30E-01	4.15E-02	7.75E-02
7.60E-01	1.30E-01	4.34E-02	7.80E-02
7.70E-01	1.30E-01	4.52E-02	7.84E-02
7.80E-01	1.30E-01	4.71E-02	7.90E-02
7.90E-01	1.30E-01	4.91E-02	7.95E-02
8.00E-01	1.30E-01	5.11E-02	8.01E-02
8.10E-01	1.30E-01	5.31E-02	8.07E-02
8.20E-01	1.30E-01	5.52E-02	8.14E-02
8.30E-01	1.30E-01	5.73E-02	8.21E-02
8.40E-01	1.30E-01	5.95E-02	8.29E-02
8.50E-01	1.30E-01	6.18E-02	8.37E-02
8.60E-01	1.30E-01	6.41E-02	8.46E-02
8.70E-01	1.30E-01	6.66E-02	8.56E-02
8.80E-01	1.30E-01	6.91E-02	8.67E-02
8.90E-01	1.30E-01	7.18E-02	8.80E-02
9.00E-01	1.30E-01	7.46E-02	8.93E-02
9.10E-01	1.30E-01	7.76E-02	9.08E-02
9.20E-01	1.30E-01	8.07E-02	9.26E-02
9.30E-01	1.30E-01	8.42E-02	9.45E-02
9.40E-01	1.30E-01	8.79E-02	9.68E-02
9.50E-01	1.30E-01	9.20E-02	9.94E-02
9.60E-01	1.30E-01	9.66E-02	1.03E-01
9.70E-01	1.30E-01	1.02E-01	1.06E-01
9.80E-01	1.30E-01	1.08E-01	1.11E-01
9.90E-01	1.30E-01	1.16E-01	1.18E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	1.40E-01	-6.74E-02	7.26E-02
1.00E-02	1.40E-01	-6.61E-02	7.27E-02
2.00E-02	1.40E-01	-6.48E-02	7.27E-02
3.00E-02	1.40E-01	-6.36E-02	7.28E-02
4.00E-02	1.40E-01	-6.23E-02	7.28E-02
5.00E-02	1.40E-01	-6.10E-02	7.29E-02
6.00E-02	1.40E-01	-5.98E-02	7.30E-02
7.00E-02	1.40E-01	-5.85E-02	7.30E-02
8.00E-02	1.40E-01	-5.72E-02	7.31E-02
9.00E-02	1.40E-01	-5.59E-02	7.31E-02
1.00E-01	1.40E-01	-5.46E-02	7.32E-02
1.10E-01	1.40E-01	-5.33E-02	7.33E-02
1.20E-01	1.40E-01	-5.20E-02	7.33E-0

x	y	$\Phi(x,y)$	τ
0.00E+00	1.50E-01	-7.20E-02	7.80E-02
1.00E-02	1.50E-01	-7.06E-02	7.81E-02
2.00E-02	1.50E-01	-6.93E-02	7.82E-02
3.00E-02	1.50E-01	-6.79E-02	7.82E-02
4.00E-02	1.50E-01	-6.66E-02	7.83E-02
5.00E-02	1.50E-01	-6.52E-02	7.83E-02
6.00E-02	1.50E-01	-6.39E-02	7.84E-02
7.00E-02	1.50E-01	-6.25E-02	7.85E-02
8.00E-02	1.50E-01	-6.11E-02	7.85E-02
9.00E-02	1.50E-01	-5.98E-02	7.86E-02
1.00E-01	1.50E-01	-5.84E-02	7.87E-02
1.10E-01	1.50E-01	-5.70E-02	7.87E-02
1.20E-01	1.50E-01	-5.56E-02	7.88E-02
1.30E-01	1.50E-01	-5.42E-02	7.89E-02
1.40E-01	1.50E-01	-5.28E-02	7.90E-02
1.50E-01	1.50E-01	-5.14E-02	7.90E-02
1.60E-01	1.50E-01	-5.00E-02	7.91E-02
1.70E-01	1.50E-01	-4.86E-02	7.92E-02
1.80E-01	1.50E-01	-4.71E-02	7.93E-02
1.90E-01	1.50E-01	-4.57E-02	7.94E-02
2.00E-01	1.50E-01	-4.43E-02	7.95E-02
2.10E-01	1.50E-01	-4.28E-02	7.95E-02
2.20E-01	1.50E-01	-4.14E-02	7.96E-02
2.30E-01	1.50E-01	-3.99E-02	7.97E-02
2.40E-01	1.50E-01	-3.84E-02	7.98E-02
2.50E-01	1.50E-01	-3.70E-02	7.99E-02
2.60E-01	1.50E-01	-3.55E-02	8.00E-02
2.70E-01	1.50E-01	-3.40E-02	8.01E-02
2.80E-01	1.50E-01	-3.25E-02	8.02E-02
2.90E-01	1.50E-01	-3.10E-02	8.03E-02
3.00E-01	1.50E-01	-2.95E-02	8.04E-02
3.10E-01	1.50E-01	-2.80E-02	8.05E-02
3.20E-01	1.50E-01	-2.65E-02	8.06E-02
3.30E-01	1.50E-01	-2.50E-02	8.07E-02
3.40E-01	1.50E-01	-2.35E-02	8.09E-02
3.50E-01	1.50E-01	-2.19E-02	8.10E-02
3.60E-01	1.50E-01	-2.04E-02	8.11E-02
3.70E-01	1.50E-01	-1.88E-02	8.12E-02
3.80E-01	1.50E-01	-1.73E-02	8.14E-02
3.90E-01	1.50E-01	-1.57E-02	8.15E-02
4.00E-01	1.50E-01	-1.41E-02	8.16E-02
4.10E-01	1.50E-01	-1.25E-02	8.18E-02
4.20E-01	1.50E-01	-1.09E-02	8.19E-02
4.30E-01	1.50E-01	-9.31E-03	8.21E-02
4.40E-01	1.50E-01	-7.70E-03	8.22E-02
4.50E-01	1.50E-01	-6.07E-03	8.24E-02
4.60E-01	1.50E-01	-4.44E-03	8.26E-02
4.70E-01	1.50E-01	-2.80E-03	8.27E-02
4.80E-01	1.50E-01	-1.14E-03	8.29E-02
4.90E-01	1.50E-01	5.20E-04	8.31E-02
5.00E-01	1.50E-01	2.19E-03	8.33E-02
5.10E-01	1.50E-01	3.88E-03	8.35E-02
5.20E-01	1.50E-01	5.58E-03	8.37E-02
5.30E-01	1.50E-01	7.29E-03	8.39E-02
5.40E-01	1.50E-01	9.01E-03	8.41E-02
5.50E-01	1.50E-01	1.07E-02	8.43E-02
5.60E-01	1.50E-01	1.25E-02	8.45E-02
5.70E-01	1.50E-01	1.42E-02	8.48E-02
5.80E-01	1.50E-01	1.60E-02	8.50E-02
5.90E-01	1.50E-01	1.78E-02	8.53E-02
6.00E-01	1.50E-01	1.96E-02	8.55E-02
6.10E-01	1.50E-01	2.14E-02	8.58E-02
6.20E-01	1.50E-01	2.33E-02	8.61E-02
6.30E-01	1.50E-01	2.51E-02	8.64E-02
6.40E-01	1.50E-01	2.70E-02	8.67E-02
6.50E-01	1.50E-01	2.89E-02	8.70E-02
6.60E-01	1.50E-01	3.08E-02	8.74E-02
6.70E-01	1.50E-01	3.27E-02	8.77E-02
6.80E-01	1.50E-01	3.47E-02	8.81E-02
6.90E-01	1.50E-01	3.66E-02	8.85E-02
7.00E-01	1.50E-01	3.86E-02	8.89E-02
7.10E-01	1.50E-01	4.07E-02	8.94E-02
7.20E-01	1.50E-01	4.27E-02	8.98E-02
7.30E-01	1.50E-01	4.48E-02	9.03E-02
7.40E-01	1.50E-01	4.69E-02	9.08E-02
7.50E-01	1.50E-01	4.91E-02	9.13E-02
7.60E-01	1.50E-01	5.12E-02	9.19E-02
7.70E-01	1.50E-01	5.35E-02	9.25E-02
7.80E-01	1.50E-01	5.57E-02	9.31E-02
7.90E-01	1.50E-01	5.80E-02	9.38E-02
8.00E-01	1.50E-01	6.04E-02	9.45E-02
8.10E-01	1.50E-01	6.28E-02	9.53E-02
8.20E-01	1.50E-01	6.53E-02	9.61E-02
8.30E-01	1.50E-01	6.78E-02	9.70E-02
8.40E-01	1.50E-01	7.05E-02	9.79E-02
8.50E-01	1.50E-01	7.32E-02	9.89E-02
8.60E-01	1.50E-01	7.60E-02	1.00E-01
8.70E-01	1.50E-01	7.88E-02	1.01E-01
8.80E-01	1.50E-01	8.19E-02	1.03E-01
8.90E-01	1.50E-01	8.50E-02	1.04E-01
9.00E-01	1.50E-01	8.83E-02	1.06E-01
9.10E-01	1.50E-01	9.18E-02	1.07E-01
9.20E-01	1.50E-01	9.55E-02	1.09E-01
9.30E-01	1.50E-01	9.95E-02	1.12E-01
9.40E-01	1.50E-01	1.04E-01	1.14E-01
9.50E-01	1.50E-01	1.09E-01	1.17E-01
9.60E-01	1.50E-01	1.14E-01	1.21E-01
9.70E-01	1.50E-01	1.20E-01	1.25E-01
9.80E-01	1.50E-01	1.27E-01	1.30E-01
9.90E-01	1.50E-01	1.36E-01	1.37E-01

x	y	$\Phi(x,y)$	τ
0.00E+00	1.60E-01	-7.65E-02	8.35E-02
1.00E-02	1.60E-01	-7.51E-02	8.36E-02
2.00E-02	1.60E-01	-7.37E-02	8.36E-02
3.00E-02	1.60E-01	-7.23E-02	8.37E-02
4.00E-02	1.60E-01	-7.08E-02	8.38E-02
5.00E-02	1.60E-01	-6.94E-02	8.38E-02
6.00E-02	1.60E-01	-6.80E-02	8.39E-02
7.00E-02	1.60E-01	-6.65E-02	8.40E-02
8.00E-02	1.60E-01	-6.51E-02	8.41E-02
9.00E-02	1.60E-01	-6.36E-02	8.41E-02
1.00E-01	1.60E-01	-6.21E-02	8.42E-02
1.10E-01	1.60E-01	-6.07E-02	8.43E-02
1.20E-01	1.60E-01	-5.92E-02	8.44E-02
1.30E-01	1.60E-01	-5.77E-02	8.45E-02
1.40E-01	1.60E-01	-5.62E-02	8.45E-02
1.50E-01	1.60E-01	-5.47E-02	8.46E-02
1.60E-01	1.60E-01	-5.32E-02	8.47E-02
1.70E-01	1.60E-01	-5.17E-02	8.48E-02
1.80E-01	1.60E-01	-5.02E-02	8.49E-02
1.90E-01	1.60E-01	-4.87E-02	8.50E-02
2.00E-01	1.60E-01	-4.71E-02	8.51E-02
2.10E-01	1.60E-01	-4.56E-02	8.52E-02
2.20E-01	1.60E-01	-4.41E-02	8.53E-02
2.30E-01	1.60E-01	-4.25E-02	8.54E-02
2.40E-01	1.60E-01	-4.10E-02	8.55E-02
2.50E-01	1.60E-01	-3.94E-02	8.56E-02
2.60E-01	1.60E-01	-3.78E-02	8.57E-02
2.70E-01	1.60E-01	-3.63E-02	8.58E-02
2.80E-01	1.60E-01	-3.47E-02	8.59E-02
2.90E-01	1.60E-01	-3.31E-02	8.61E-02
3.00E-01	1.60E-01	-3.15E-02	8.62E-02
3.10E-01	1.60E-01	-2.99E-02	8.63E-02
3.20E-01	1.60E-01	-2.82E-02	8.64E-02
3.30E-01	1.60E-01	-2.66E-02	8.66E-02
3.40E-01	1.60E-01	-2.50E-02	8.67E-02
3.50E-01	1.60E-01	-2.33E-02	8.68E-02
3.60E-01	1.60E-01	-2.17E-02	8.70E-02
3.70E-01	1.60E-01	-2.00E-02	8.71E-02
3.80E-01	1.60E-01	-1.84E-02	8.73E-02
3.90E-01	1.60E-01	-1.67E-02	8.74E-02
4.00E-01	1.60E-01	-1.50E-02	8.76E-02
4.10E-01	1.60E-01	-1.33E-02	8.77E-02
4.20E-01	1.60E-01	-1.16E-02	8.79E-02
4.30E-01	1.60E-01	-9.87E-03	8.81E-02
4.40E-01	1.60E-01	-8.15E-03	8.82E-02
4.50E-01	1.60E-01	-6.41E-03	8.84E-02
4.60E-01	1.60E-01	-4.66E-03	8.86E-02
4.70E-01	1.60E-01	-2.90E-03	8.88E-02
4.80E-01	1.60E-01	-1.13E-03	8.90E-02
4.90E-01	1.60E-01	6.56E-04	8.92E-02
5.00E-01	1.60E-01	2.45E-03	8.94E-02
5.10E-01	1.60E-01	4.26E-03	8.96E-02
5.20E-01	1.60E-01	6.08E-03	8.98E-02
5.30E-01	1.60E-01	7.91E-03	9.01E-02
5.40E-01	1.60E-01	9.76E-03	9.03E-02
5.50E-01	1.60E-01	1.16E-02	9.06E-02
5.60E-01	1.60E-01	1.35E-02	9.08E-02
5.70E-01	1.60E-01	1.54E-02	9.11E-02
5.80E-01	1.60E-01	1.73E-02	9.14E-02
5.90E-01	1.60E-01	1.92E-02	9.17E-02
6.00E-01	1.60E-01	2.12E-02	9.20E-02
6.10E-01	1.60E-01	2.31E-02	9.23E-02
6.20E-01	1.60E-01	2.51E-02	9.26E-02
6.30E-01	1.60E-01	2.71E-02	9.29E-02
6.40E-01	1.60E-01	2.91E-02	9.33E-02
6.50E-01	1.60E-01	3.11E-02	9.36E-02
6.60E-01	1.60E-01	3.32E-02	9.40E-02
6.70E-01	1.60E-01	3.53E-02	9.44E-02
6.80E-01	1.60E-01	3.74E-02	9.48E-02
6.90E-01	1.60E-01	3.95E-02	9.53E-02
7.00E-01	1.60E-01	4.17E-02	9.57E-02
7.10E-01	1.60E-01	4.38E-02	9.62E-02
7.20E-01	1.60E-01	4.61E-02	9.67E-02
7.30E-01	1.60E-01	4.83E-02	9.72E-02
7.40E-01	1.60E-01	5.06E-02	9.78E-02
7.50E-01	1.60E-01	5.29E-02	9.84E-02
7.60E-01	1.60E-01	5.53E-02	9.90E-02
7.70E-01	1.60E-01	5.77E-02	9.97E-02
7.80E-01	1.60E-01	6.01E-02	1.00E-01
7.90E-01	1.60E-01	6.26E-02	1.01E-01
8.00E-01	1.60E-01	6.52E-02	1.02E-01
8.10E-01	1.60E-01	6.78E-02	1.03E-01
8.20E-01	1.60E-01	7.05E-02	1.04E-01
8.30E-01	1.60E-01	7.32E-02	1.05E-01
8.40E-01	1.60E-01	7.60E-02	1.06E-01
8.50E-01	1.60E-01	7.90E-02	1.07E-01
8.60E-01	1.60E-01	8.20E-02	1.08E-01
8.70E-01	1.60E-01	8.51E-02	1.09E-01
8.80E-01	1.60E-01	8.83E-02	1.11E-01
8.90E-01	1.60E-01	9.17E-02	1.12E-01
9.00E-01	1.60E-01	9.53E-02	1.14E-01
9.10E-01	1.60E-01	9.91E-02	1.16E-01
9.20E-01	1.60E-01	1.03E-01	1.18E-01
9.30E-01	1.60E-01	1.07E-01	1.20E-01
9.40E-01	1.60E-01	1.12E-01	1.23E-01
9.50E-01	1.60E-01	1.17E-01	1.26E-01
9.60E-01	1.60E-01	1.22E-01	1.30E-01
9.70E-01	1.60E-01	1.29E-01	1.34E-01
9.80E-01	1.60E-01	1.36E-01	1.40E-01
9.90E-01	1.60E-01	1.45E-01	1.47E-01

x	y	$\Phi(x,y)$	τ
0.00E+00	1.70E-01	-8.10E-02	8.90E-02
1.00E-02	1.70E-01	-7.96E-02	8.90E-02
2.00E-02	1.70E-01	-7.81E-02	8.91E-02
3.00E-02	1.70E-01	-7.66E-02	8.92E-02
4.00E-02	1.70E-01	-7.51E-02	8.93E-02
5.00E-02	1.70E-01	-7.35E-02	8.93E-02
6.00E-02	1.70E-01	-7.20E-02	8.94E-02
7.00E-02	1.70E-01	-7.05E-02	8.95E-02
8.00E-02	1.70E-01	-6.90E-02	8.96E-02
9.00E-02	1.70E-01	-6.74E-02	8.97E-02
1.00E-01	1.70E-01	-6.59E-02	8.98E-02
1.10E-01	1.70E-01	-6.43E-02	8.99E-02
1.20E-01	1.70E-01	-6.28E-02	9.00E-02
1.30E-01	1.70E-01	-6.12E-02	9.00E-02
1.40E-01	1.70E-01	-5.96E-02	9.01E-02
1.50E-01	1.70E-01	-5.80E-02	9.02E-02
1.60E-01	1.70E-01	-5.65E-02	9.03E-02
1.70E-01	1.70E-01	-5.49E-02	9.04E-02
1.80E-01	1.70E-01	-5.33E-02	9.05E-02
1.90E-01	1.70E-01	-5.16E-02	9.07E-02
2.00E-01	1.70E-01	-5.00E-02	9.08E-02
2.10E-01	1.70E-01	-4.84E-02	9.09E-02
2.20E-01	1.70E-01	-4.68E-02	9.10E-02
2.30E-01	1.70E-01	-4.51E-02	9.11E-02
2.40E-01	1.70E-01	-4.35E-02	9.12E-02
2.50E-01	1.70E-01	-4.18E-02	9.13E-02
2.60E-01	1.70E-01	-4.02E-02	9.15E-02
2.70E-01	1.70E-01	-3.85E-02	9.16E-02
2.80E-01	1.70E-01	-3.68E-02	9.17E-02
2.90E-01	1.70E-01	-3.51E-02	9.19E-02
3.00E-01	1.70E-01	-3.34E-02	9.20E-02
3.10E-01	1.70E-01	-3.17E-02	9.21E-02
3.20E-01	1.70E-01	-3.00E-02	9.23E-02
3.30E-01	1.70E-01	-2.83E-02	9.24E-02
3.40E-01	1.70E-01	-2.65E-02	9.26E-02
3.50E-01	1.70E-01	-2.48E-02	9.27E-02
3.60E-01	1.70E-01	-2.30E-02	9.29E-02
3.70E-01	1.70E-01	-2.12E-02	9.30E-02
3.80E-01	1.70E-01	-1.95E-02	9.32E-02
3.90E-01	1.70E-01	-1.77E-02	9.34E-02
4.00E-01	1.70E-01	-1.59E-02	9.36E-02
4.10E-01	1.70E-01	-1.41E-02	9.37E-02
4.20E-01	1.70E-01	-1.23E-02	9.39E-02
4.30E-01	1.70E-01	-1.04E-02	9.41E-02
4.40E-01	1.70E-01	-8.59E-03	9.43E-02
4.50E-01	1.70E-01	-6.74E-03	9.45E-02
4.60E-01	1.70E-01	-4.87E-03	9.47E-02
4.70E-01	1.70E-01	-3.00E-03	9.49E-02
4.80E-01	1.70E-01	-1.11E-03	9.51E-02
4.90E-01	1.70E-01	7.98E-04	9.54E-02
5.00E-01	1.70E-01	2.72E-03	9.56E-02
5.10E-01	1.70E-01	4.65E-03	9.59E-02
5.20E-01	1.70E-01	6.59E-03	9.61E-02
5.30E-01	1.70E-01	8.55E-03	9.64E-02
5.40E-01	1.70E-01	1.05E-02	9.66E-02
5.50E-01	1.70E-01	1.25E-02	9.69E-02
5.60E-01	1.70E-01	1.45E-02	9.72E-02
5.70E-01	1.70E-01	1.65E-02	9.75E-02
5.80E-01	1.70E-01	1.86E-02	9.78E-02
5.90E-01	1.70E-01	2.06E-02	9.81E-02
6.00E-01	1.70E-01	2.27E-02	9.84E-02
6.10E-01	1.70E-01	2.48E-02	9.88E-02
6.20E-01	1.70E-01	2.69E-02	9.91E-02
6.30E-01	1.70E-01	2.91E-02	9.95E-02
6.40E-01	1.70E-01	3.12E-02	9.99E-02
6.50E-01	1.70E-01	3.34E-02	1.00E-01
6.60E-01	1.70E-01	3.56E-02	1.01E-01
6.70E-01	1.70E-01	3.79E-02	1.01E-01
6.80E-01	1.70E-01	4.01E-02	1.02E-01
6.90E-01	1.70E-01	4.24E-02	1.02E-01
7.00E-01	1.70E-01	4.47E-02	1.03E-01
7.10E-01	1.70E-01	4.71E-02	1.03E-01
7.20E-01	1.70E-01	4.95E-02	1.04E-01
7.30E-01	1.70E-01	5.19E-02	1.04E-01
7.40E-01	1.70E-01	5.43E-02	1.05E-01
7.50E-01	1.70E-01	5.68E-02	1.06E-01
7.60E-01	1.70E-01	5.94E-02	1.06E-01
7.70E-01	1.70E-01	6.19E-02	1.07E-01
7.80E-01	1.70E-01	6.46E-02	1.08E-01
7.90E-01	1.70E-01	6.73E-02	1.09E-01
8.00E-01	1.70E-01	7.00E-02	1.09E-01
8.10E-01	1.70E-01	7.28E-02	1.10E-01
8.20E-01	1.70E-01	7.57E-02	1.11E-01
8.30E-01	1.70E-01	7.87E-02	1.12E-01
8.40E-01	1.70E-01	8.17E-02	1.13E-01
8.50E-01	1.70E-01	8.48E-02	1.15E-01
8.60E-01	1.70E-01	8.81E-02	1.16E-01
8.70E-01	1.70E-01	9.14E-02	1.17E-01
8.80E-01	1.70E-01	9.49E-02	1.19E-01
8.90E-01	1.70E-01	9.85E-02	1.21E-01
9.00E-01	1.70E-01	1.02E-01	1.22E-01
9.10E-01	1.70E-01	1.06E-01	1.24E-01
9.20E-01	1.70E-01	1.11E-01	1.27E-01
9.30E-01	1.70E-01	1.15E-01	1.29E-01
9.40E-01	1.70E-01	1.20E-01	1.32E-01
9.50E-01	1.70E-01	1.25E-01	1.36E-01
9.60E-01	1.70E-01	1.31E-01	1.39E-01
9.70E-01	1.70E-01	1.38E-01	1.44E-01
9.80E-01	1.70E-01	1.46E-01	1.50E-01
9.90E-01	1.70E-01	1.55E-01	1.57E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	1.80E-01	-8.55E-02	9.45E-02
1.00E-02	1.80E-01	-8.40E-02	9.45E-02
2.00E-02	1.80E-01	-8.24E-02	9.46E-02
3.00E-02	1.80E-01	-8.08E-02	9.47E-02
4.00E-02	1.80E-01	-7.92E-02	9.48E-02
5.00E-02	1.80E-01	-7.77E-02	9.49E-02
6.00E-02	1.80E-01	-7.61E-02	9.50E-02
7.00E-02	1.80E-01	-7.45E-02	9.51E-02
8.00E-02	1.80E-01	-7.28E-02	9.52E-02
9.00E-02	1.80E-01	-7.12E-02	9.53E-02
1.00E-01	1.80E-01	-6.96E-02	9.54E-02
1.10E-01	1.80E-01	-6.80E-02	9.55E-02
1.20E-01	1.80E-01	-6.63E-02	9.56E-02
1.30E-01	1.80E-01	-6.47E-02	9.57E-02
1.40E-01	1.80E-01	-6.30E-02	9.58E-02
1.50E-01	1.80E-01	-6.13E-02	9.59E-02
1.60E-01	1.80E-01	-5.97E-02	9.60E-02
1.70E-01	1.80E-01	-5.80E-02	9.61E-02
1.80E-01	1.80E-01	-5.63E-02	9.62E-02
1.90E-01	1.80E-01	-5.46E-02	9.64E-02
2.00E-01	1.80E-01	-5.29E-02	9.65E-02
2.10E-01	1.80E-01	-5.12E-02	9.66E-02
2.20E-01	1.80E-01	-4.95E-02	9.67E-02
2.30E-01	1.80E-01	-4.77E-02	9.69E-02
2.40E-01	1.80E-01	-4.60E-02	9.70E-02
2.50E-01	1.80E-01	-4.42E-02	9.71E-02
2.60E-01	1.80E-01	-4.25E-02	9.73E-02
2.70E-01	1.80E-01	-4.07E-02	9.74E-02
2.80E-01	1.80E-01	-3.89E-02	9.76E-02
2.90E-01	1.80E-01	-3.71E-02	9.77E-02
3.00E-01	1.80E-01	-3.53E-02	9.79E-02
3.10E-01	1.80E-01	-3.35E-02	9.80E-02
3.20E-01	1.80E-01	-3.17E-02	9.82E-02
3.30E-01	1.80E-01	-2.99E-02	9.83E-02
3.40E-01	1.80E-01	-2.80E-02	9.85E-02
3.50E-01	1.80E-01	-2.62E-02	9.87E-02
3.60E-01	1.80E-01	-2.43E-02	9.89E-02
3.70E-01	1.80E-01	-2.25E-02	9.90E-02
3.80E-01	1.80E-01	-2.06E-02	9.92E-02
3.90E-01	1.80E-01	-1.87E-02	9.94E-02
4.00E-01	1.80E-01	-1.68E-02	9.96E-02
4.10E-01	1.80E-01	-1.49E-02	9.98E-02
4.20E-01	1.80E-01	-1.29E-02	1.00E-01
4.30E-01	1.80E-01	-1.10E-02	1.00E-01
4.40E-01	1.80E-01	-9.03E-03	1.00E-01
4.50E-01	1.80E-01	-7.06E-03	1.01E-01
4.60E-01	1.80E-01	-5.08E-03	1.01E-01
4.70E-01	1.80E-01	-3.09E-03	1.01E-01
4.80E-01	1.80E-01	-1.08E-03	1.01E-01
4.90E-01	1.80E-01	9.47E-04	1.02E-01
5.00E-01	1.80E-01	2.99E-03	1.02E-01
5.10E-01	1.80E-01	5.04E-03	1.02E-01
5.20E-01	1.80E-01	7.11E-03	1.02E-01
5.30E-01	1.80E-01	9.20E-03	1.03E-01
5.40E-01	1.80E-01	1.13E-02	1.03E-01
5.50E-01	1.80E-01	1.34E-02	1.03E-01
5.60E-01	1.80E-01	1.56E-02	1.04E-01
5.70E-01	1.80E-01	1.77E-02	1.04E-01
5.80E-01	1.80E-01	1.99E-02	1.04E-01
5.90E-01	1.80E-01	2.21E-02	1.05E-01
6.00E-01	1.80E-01	2.43E-02	1.05E-01
6.10E-01	1.80E-01	2.65E-02	1.05E-01
6.20E-01	1.80E-01	2.88E-02	1.06E-01
6.30E-01	1.80E-01	3.11E-02	1.06E-01
6.40E-01	1.80E-01	3.34E-02	1.07E-01
6.50E-01	1.80E-01	3.57E-02	1.07E-01
6.60E-01	1.80E-01	3.81E-02	1.08E-01
6.70E-01	1.80E-01	4.05E-02	1.08E-01
6.80E-01	1.80E-01	4.29E-02	1.09E-01
6.90E-01	1.80E-01	4.53E-02	1.09E-01
7.00E-01	1.80E-01	4.78E-02	1.10E-01
7.10E-01	1.80E-01	5.03E-02	1.10E-01
7.20E-01	1.80E-01	5.29E-02	1.11E-01
7.30E-01	1.80E-01	5.55E-02	1.11E-01
7.40E-01	1.80E-01	5.81E-02	1.12E-01
7.50E-01	1.80E-01	6.08E-02	1.13E-01
7.60E-01	1.80E-01	6.35E-02	1.14E-01
7.70E-01	1.80E-01	6.63E-02	1.14E-01
7.80E-01	1.80E-01	6.91E-02	1.15E-01
7.90E-01	1.80E-01	7.20E-02	1.16E-01
8.00E-01	1.80E-01	7.49E-02	1.17E-01
8.10E-01	1.80E-01	7.79E-02	1.18E-01
8.20E-01	1.80E-01	8.10E-02	1.19E-01
8.30E-01	1.80E-01	8.42E-02	1.20E-01
8.40E-01	1.80E-01	8.74E-02	1.21E-01
8.50E-01	1.80E-01	9.08E-02	1.23E-01
8.60E-01	1.80E-01	9.42E-02	1.24E-01
8.70E-01	1.80E-01	9.78E-02	1.26E-01
8.80E-01	1.80E-01	1.02E-01	1.27E-01
8.90E-01	1.80E-01	1.05E-01	1.29E-01
9.00E-01	1.80E-01	1.09E-01	1.31E-01
9.10E-01	1.80E-01	1.14E-01	1.33E-01
9.20E-01	1.80E-01	1.18E-01	1.36E-01
9.30E-01	1.80E-01	1.23E-01	1.38E-01
9.40E-01	1.80E-01	1.28E-01	1.41E-01
9.50E-01	1.80E-01	1.34E-01	1.45E-01
9.60E-01	1.80E-01	1.40E-01	1.49E-01
9.70E-01	1.80E-01	1.47E-01	1.54E-01
9.80E-01	1.80E-01	1.55E-01	1.59E-01
9.90E-01	1.80E-01	1.65E-01	1.67E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	1.90E-01	-9.00E-02	1.00E-01
1.00E-02	1.90E-01	-8.84E-02	1.00E-01
2.00E-02	1.90E-01	-8.67E-02	1.00E-01
3.00E-02	1.90E-01	-8.51E-02	1.00E-01
4.00E-02	1.90E-01	-8.34E-02	1.00E-01
5.00E-02	1.90E-01	-8.17E-02	1.00E-01
6.00E-02	1.90E-01	-8.01E-02	1.01E-01
7.00E-02	1.90E-01	-7.84E-02	1.01E-01
8.00E-02	1.90E-01	-7.67E-02	1.01E-01
9.00E-02	1.90E-01	-7.50E-02	1.01E-01
1.00E-01	1.90E-01	-7.33E-02	1.01E-01
1.10E-01	1.90E-01	-7.16E-02	1.01E-01
1.20E-01	1.90E-01	-6.99E-02	1.01E-01
1.30E-01	1.90E-01	-6.81E-02	1.01E-01
1.40E-01	1.90E-01	-6.64E-02	1.01E-01
1.50E-01	1.90E-01	-6.46E-02	1.02E-01
1.60E-01	1.90E-01	-6.29E-02	1.02E-01
1.70E-01	1.90E-01	-6.11E-02	1.02E-01
1.80E-01	1.90E-01	-5.93E-02	1.02E-01
1.90E-01	1.90E-01	-5.75E-02	1.02E-01
2.00E-01	1.90E-01	-5.57E-02	1.02E-01
2.10E-01	1.90E-01	-5.39E-02	1.02E-01
2.20E-01	1.90E-01	-5.21E-02	1.03E-01
2.30E-01	1.90E-01	-5.03E-02	1.03E-01
2.40E-01	1.90E-01	-4.85E-02	1.03E-01
2.50E-01	1.90E-01	-4.66E-02	1.03E-01
2.60E-01	1.90E-01	-4.48E-02	1.03E-01
2.70E-01	1.90E-01	-4.29E-02	1.03E-01
2.80E-01	1.90E-01	-4.10E-02	1.03E-01
2.90E-01	1.90E-01	-3.92E-02	1.04E-01
3.00E-01	1.90E-01	-3.73E-02	1.04E-01
3.10E-01	1.90E-01	-3.54E-02	1.04E-01
3.20E-01	1.90E-01	-3.34E-02	1.04E-01
3.30E-01	1.90E-01	-3.15E-02	1.04E-01
3.40E-01	1.90E-01	-2.96E-02	1.04E-01
3.50E-01	1.90E-01	-2.76E-02	1.05E-01
3.60E-01	1.90E-01	-2.56E-02	1.05E-01
3.70E-01	1.90E-01	-2.37E-02	1.05E-01
3.80E-01	1.90E-01	-2.17E-02	1.05E-01
3.90E-01	1.90E-01	-1.97E-02	1.05E-01
4.00E-01	1.90E-01	-1.77E-02	1.06E-01
4.10E-01	1.90E-01	-1.56E-02	1.06E-01
4.20E-01	1.90E-01	-1.36E-02	1.06E-01
4.30E-01	1.90E-01	-1.15E-02	1.06E-01
4.40E-01	1.90E-01	-9.47E-03	1.07E-01
4.50E-01	1.90E-01	-7.39E-03	1.07E-01
4.60E-01	1.90E-01	-5.29E-03	1.07E-01
4.70E-01	1.90E-01	-3.17E-03	1.07E-01
4.80E-01	1.90E-01	-1.05E-03	1.08E-01
4.90E-01	1.90E-01	1.10E-03	1.08E-01
5.00E-01	1.90E-01	3.26E-03	1.08E-01
5.10E-01	1.90E-01	5.44E-03	1.09E-01
5.20E-01	1.90E-01	7.64E-03	1.09E-01
5.30E-01	1.90E-01	9.85E-03	1.09E-01
5.40E-01	1.90E-01	1.21E-02	1.09E-01
5.50E-01	1.90E-01	1.43E-02	1.10E-01
5.60E-01	1.90E-01	1.66E-02	1.10E-01
5.70E-01	1.90E-01	1.89E-02	1.11E-01
5.80E-01	1.90E-01	2.12E-02	1.11E-01
5.90E-01	1.90E-01	2.35E-02	1.11E-01
6.00E-01	1.90E-01	2.59E-02	1.12E-01
6.10E-01	1.90E-01	2.83E-02	1.12E-01
6.20E-01	1.90E-01	3.07E-02	1.13E-01
6.30E-01	1.90E-01	3.31E-02	1.13E-01
6.40E-01	1.90E-01	3.56E-02	1.13E-01
6.50E-01	1.90E-01	3.81E-02	1.14E-01
6.60E-01	1.90E-01	4.06E-02	1.14E-01
6.70E-01	1.90E-01	4.31E-02	1.15E-01
6.80E-01	1.90E-01	4.57E-02	1.16E-01
6.90E-01	1.90E-01	4.83E-02	1.16E-01
7.00E-01	1.90E-01	5.09E-02	1.17E-01
7.10E-01	1.90E-01	5.36E-02	1.17E-01
7.20E-01	1.90E-01	5.63E-02	1.18E-01
7.30E-01	1.90E-01	5.91E-02	1.19E-01
7.40E-01	1.90E-01	6.19E-02	1.19E-01
7.50E-01	1.90E-01	6.47E-02	1.20E-01
7.60E-01	1.90E-01	6.77E-02	1.21E-01
7.70E-01	1.90E-01	7.06E-02	1.22E-01
7.80E-01	1.90E-01	7.36E-02	1.23E-01
7.90E-01	1.90E-01	7.67E-02	1.24E-01
8.00E-01	1.90E-01	7.98E-02	1.25E-01
8.10E-01	1.90E-01	8.30E-02	1.26E-01
8.20E-01	1.90E-01	8.63E-02	1.27E-01
8.30E-01	1.90E-01	8.97E-02	1.28E-01
8.40E-01	1.90E-01	9.32E-02	1.29E-01
8.50E-01	1.90E-01	9.67E-02	1.31E-01
8.60E-01	1.90E-01	1.00E-01	1.32E-01
8.70E-01	1.90E-01	1.04E-01	1.34E-01
8.80E-01	1.90E-01	1.08E-01	1.36E-01
8.90E-01	1.90E-01	1.12E-01	1.38E-01
9.00E-01	1.90E-01	1.17E-01	1.40E-01
9.10E-01	1.90E-01	1.21E-01	1.42E-01
9.20E-01	1.90E-01	1.26E-01	1.44E-01
9.30E-01	1.90E-01	1.31E-01	1.47E-01
9.40E-01	1.90E-01	1.37E-01	1.50E-01
9.50E-01	1.90E-01	1.42E-01	1.54E-01
9.60E-01	1.90E-01	1.49E-01	1.58E-01
9.70E-01	1.90E-01	1.56E-01	1.63E-01
9.80E-01	1.90E-01	1.64E-01	1.69E-01
9.90E-01	1.90E-01	1.75E-01	1.77E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	2.00E-01	-9.44E-02	1.06E-01
1.00E-02	2.00E-01	-9.27E-02	1.06E-01
2.00E-02	2.00E-01	-9.10E-02	1.06E-01
3.00E-02	2.00E-01	-8.93E-02	1.06E-01
4.00E-02	2.00E-01	-8.75E-02	1.06E-01
5.00E-02	2.00E-01	-8.58E-02	1.06E-01
6.00E-02	2.00E-01	-8.41E-02	1.06E-01
7.00E-02	2.00E-01	-8.23E-02	1.06E-01
8.00E-02	2.00E-01	-8.05E-02	1.06E-01
9.00E-02	2.00E-01	-7.88E-02	1.07E-01
1.00E-01	2.00E-01	-7.70E-02	1.07E-01
1.10E-01	2.00E-01	-7.52E-02	1.07E-01
1.20E-01	2.00E-01	-7.34E-02	1.07E-01
1.30E-01	2.00E-01	-7.16E-02	1.07E-01
1.40E-01	2.00E-01	-6.97E-02	1.07E-01
1.50E-01	2.00E-01	-6.79E-02	1.07E-01
1.60E-01	2.00E-01	-6.61E-02	1.07E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	2.10E-01	-9.88E-02	1.11E-01
1.00E-02	2.10E-01	-9.70E-02	1.11E-01
2.00E-02	2.10E-01	-9.53E-02	1.11E-01
3.00E-02	2.10E-01	-9.35E-02	1.12E-01
4.00E-02	2.10E-01	-9.17E-02	1.12E-01
5.00E-02	2.10E-01	-8.98E-02	1.12E-01
6.00E-02	2.10E-01	-8.80E-02	1.12E-01
7.00E-02	2.10E-01	-8.62E-02	1.12E-01
8.00E-02	2.10E-01	-8.43E-02	1.12E-01
9.00E-02	2.10E-01	-8.25E-02	1.12E-01
1.00E-01	2.10E-01	-8.06E-02	1.12E-01
1.10E-01	2.10E-01	-7.88E-02	1.13E-01
1.20E-01	2.10E-01	-7.69E-02	1.13E-01
1.30E-01	2.10E-01	-7.50E-02	1.13E-01
1.40E-01	2.10E-01	-7.31E-02	1.13E-01
1.50E-01	2.10E-01	-7.12E-02	1.13E-01
1.60E-01	2.10E-01	-6.92E-02	1.13E-01
1.70E-01	2.10E-01	-6.73E-02	1.13E-01
1.80E-01	2.10E-01	-6.54E-02	1.14E-01
1.90E-01	2.10E-01	-6.34E-02	1.14E-01
2.00E-01	2.10E-01	-6.14E-02	1.14E-01
2.10E-01	2.10E-01	-5.94E-02	1.14E-01
2.20E-01	2.10E-01	-5.75E-02	1.14E-01
2.30E-01	2.10E-01	-5.55E-02	1.14E-01
2.40E-01	2.10E-01	-5.34E-02	1.15E-01
2.50E-01	2.10E-01	-5.14E-02	1.15E-01
2.60E-01	2.10E-01	-4.94E-02	1.15E-01
2.70E-01	2.10E-01	-4.73E-02	1.15E-01
2.80E-01	2.10E-01	-4.53E-02	1.15E-01
2.90E-01	2.10E-01	-4.32E-02	1.16E-01
3.00E-01	2.10E-01	-4.11E-02	1.16E-01
3.10E-01	2.10E-01	-3.90E-02	1.16E-01
3.20E-01	2.10E-01	-3.69E-02	1.16E-01
3.30E-01	2.10E-01	-3.47E-02	1.16E-01
3.40E-01	2.10E-01	-3.26E-02	1.17E-01
3.50E-01	2.10E-01	-3.04E-02	1.17E-01
3.60E-01	2.10E-01	-2.83E-02	1.17E-01
3.70E-01	2.10E-01	-2.61E-02	1.17E-01
3.80E-01	2.10E-01	-2.39E-02	1.18E-01
3.90E-01	2.10E-01	-2.17E-02	1.18E-01
4.00E-01	2.10E-01	-1.94E-02	1.18E-01
4.10E-01	2.10E-01	-1.72E-02	1.18E-01
4.20E-01	2.10E-01	-1.49E-02	1.19E-01
4.30E-01	2.10E-01	-1.26E-02	1.19E-01
4.40E-01	2.10E-01	-1.03E-02	1.19E-01
4.50E-01	2.10E-01	-8.03E-03	1.20E-01
4.60E-01	2.10E-01	-5.69E-03	1.20E-01
4.70E-01	2.10E-01	-3.34E-03	1.20E-01
4.80E-01	2.10E-01	-9.71E-04	1.20E-01
4.90E-01	2.10E-01	1.42E-03	1.21E-01
5.00E-01	2.10E-01	3.83E-03	1.21E-01
5.10E-01	2.10E-01	6.26E-03	1.21E-01
5.20E-01	2.10E-01	8.71E-03	1.22E-01
5.30E-01	2.10E-01	1.12E-02	1.22E-01
5.40E-01	2.10E-01	1.37E-02	1.23E-01
5.50E-01	2.10E-01	1.62E-02	1.23E-01
5.60E-01	2.10E-01	1.87E-02	1.23E-01
5.70E-01	2.10E-01	2.13E-02	1.24E-01
5.80E-01	2.10E-01	2.39E-02	1.24E-01
5.90E-01	2.10E-01	2.65E-02	1.25E-01
6.00E-01	2.10E-01	2.91E-02	1.25E-01
6.10E-01	2.10E-01	3.18E-02	1.26E-01
6.20E-01	2.10E-01	3.45E-02	1.26E-01
6.30E-01	2.10E-01	3.72E-02	1.27E-01
6.40E-01	2.10E-01	4.00E-02	1.27E-01
6.50E-01	2.10E-01	4.28E-02	1.28E-01
6.60E-01	2.10E-01	4.56E-02	1.28E-01
6.70E-01	2.10E-01	4.85E-02	1.29E-01
6.80E-01	2.10E-01	5.14E-02	1.30E-01
6.90E-01	2.10E-01	5.43E-02	1.30E-01
7.00E-01	2.10E-01	5.73E-02	1.31E-01
7.10E-01	2.10E-01	6.03E-02	1.32E-01
7.20E-01	2.10E-01	6.33E-02	1.33E-01
7.30E-01	2.10E-01	6.64E-02	1.33E-01
7.40E-01	2.10E-01	6.96E-02	1.34E-01
7.50E-01	2.10E-01	7.28E-02	1.35E-01
7.60E-01	2.10E-01	7.61E-02	1.36E-01
7.70E-01	2.10E-01	7.94E-02	1.37E-01
7.80E-01	2.10E-01	8.28E-02	1.38E-01
7.90E-01	2.10E-01	8.63E-02	1.39E-01
8.00E-01	2.10E-01	8.98E-02	1.40E-01
8.10E-01	2.10E-01	9.34E-02	1.42E-01
8.20E-01	2.10E-01	9.71E-02	1.43E-01
8.30E-01	2.10E-01	1.01E-01	1.44E-01
8.40E-01	2.10E-01	1.05E-01	1.46E-01
8.50E-01	2.10E-01	1.09E-01	1.47E-01
8.60E-01	2.10E-01	1.13E-01	1.49E-01
8.70E-01	2.10E-01	1.17E-01	1.51E-01
8.80E-01	2.10E-01	1.22E-01	1.53E-01
8.90E-01	2.10E-01	1.26E-01	1.55E-01
9.00E-01	2.10E-01	1.31E-01	1.57E-01
9.10E-01	2.10E-01	1.36E-01	1.60E-01
9.20E-01	2.10E-01	1.42E-01	1.62E-01
9.30E-01	2.10E-01	1.47E-01	1.65E-01
9.40E-01	2.10E-01	1.53E-01	1.69E-01
9.50E-01	2.10E-01	1.60E-01	1.73E-01
9.60E-01	2.10E-01	1.67E-01	1.77E-01
9.70E-01	2.10E-01	1.74E-01	1.82E-01
9.80E-01	2.10E-01	1.83E-01	1.89E-01
9.90E-01	2.10E-01	1.94E-01	1.97E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	2.20E-01	-1.03E-01	1.17E-01
1.00E-02	2.20E-01	-1.01E-01	1.17E-01
2.00E-02	2.20E-01	-9.95E-02	1.17E-01
3.00E-02	2.20E-01	-9.76E-02	1.17E-01
4.00E-02	2.20E-01	-9.57E-02	1.17E-01
5.00E-02	2.20E-01	-9.38E-02	1.17E-01
6.00E-02	2.20E-01	-9.19E-02	1.18E-01
7.00E-02	2.20E-01	-9.00E-02	1.18E-01
8.00E-02	2.20E-01	-8.81E-02	1.18E-01
9.00E-02	2.20E-01	-8.62E-02	1.18E-01
1.00E-01	2.20E-01	-8.43E-02	1.18E-01
1.10E-01	2.20E-01	-8.23E-02	1.18E-01
1.20E-01	2.20E-01	-8.03E-02	1.19E-01
1.30E-01	2.20E-01	-7.84E-02	1.19E-01
1.40E-01	2.20E-01	-7.64E-02	1.19E-01
1.50E-01	2.20E-01	-7.44E-02	1.19E-01
1.60E-01	2.20E-01	-7.24E-02	1.19E-01
1.70E-01	2.20E-01	-7.04E-02	1.19E-01
1.80E-01	2.20E-01	-6.83E-02	1.19E-01
1.90E-01	2.20E-01	-6.63E-02	1.20E-01
2.00E-01	2.20E-01	-6.43E-02	1.20E-01
2.10E-01	2.20E-01	-6.22E-02	1.20E-01
2.20E-01	2.20E-01	-6.01E-02	1.20E-01
2.30E-01	2.20E-01	-5.80E-02	1.20E-01
2.40E-01	2.20E-01	-5.59E-02	1.21E-01
2.50E-01	2.20E-01	-5.38E-02	1.21E-01
2.60E-01	2.20E-01	-5.17E-02	1.21E-01
2.70E-01	2.20E-01	-4.95E-02	1.21E-01
2.80E-01	2.20E-01	-4.74E-02	1.21E-01
2.90E-01	2.20E-01	-4.52E-02	1.22E-01
3.00E-01	2.20E-01	-4.30E-02	1.22E-01
3.10E-01	2.20E-01	-4.08E-02	1.22E-01
3.20E-01	2.20E-01	-3.86E-02	1.22E-01
3.30E-01	2.20E-01	-3.64E-02	1.23E-01
3.40E-01	2.20E-01	-3.41E-02	1.23E-01
3.50E-01	2.20E-01	-3.19E-02	1.23E-01
3.60E-01	2.20E-01	-2.96E-02	1.23E-01
3.70E-01	2.20E-01	-2.73E-02	1.24E-01
3.80E-01	2.20E-01	-2.50E-02	1.24E-01
3.90E-01	2.20E-01	-2.27E-02	1.24E-01
4.00E-01	2.20E-01	-2.03E-02	1.24E-01
4.10E-01	2.20E-01	-1.80E-02	1.25E-01
4.20E-01	2.20E-01	-1.56E-02	1.25E-01
4.30E-01	2.20E-01	-1.32E-02	1.25E-01
4.40E-01	2.20E-01	-1.08E-02	1.26E-01
4.50E-01	2.20E-01	-8.34E-03	1.26E-01
4.60E-01	2.20E-01	-5.89E-03	1.26E-01
4.70E-01	2.20E-01	-3.42E-03	1.27E-01
4.80E-01	2.20E-01	-9.31E-04	1.27E-01
4.90E-01	2.20E-01	1.58E-03	1.27E-01
5.00E-01	2.20E-01	4.11E-03	1.28E-01
5.10E-01	2.20E-01	6.67E-03	1.28E-01
5.20E-01	2.20E-01	9.25E-03	1.28E-01
5.30E-01	2.20E-01	1.18E-02	1.29E-01
5.40E-01	2.20E-01	1.45E-02	1.29E-01
5.50E-01	2.20E-01	1.71E-02	1.30E-01
5.60E-01	2.20E-01	1.98E-02	1.30E-01
5.70E-01	2.20E-01	2.25E-02	1.31E-01
5.80E-01	2.20E-01	2.52E-02	1.31E-01
5.90E-01	2.20E-01	2.80E-02	1.32E-01
6.00E-01	2.20E-01	3.08E-02	1.32E-01
6.10E-01	2.20E-01	3.36E-02	1.33E-01
6.20E-01	2.20E-01	3.64E-02	1.33E-01
6.30E-01	2.20E-01	3.93E-02	1.34E-01
6.40E-01	2.20E-01	4.22E-02	1.34E-01
6.50E-01	2.20E-01	4.52E-02	1.35E-01
6.60E-01	2.20E-01	4.81E-02	1.36E-01
6.70E-01	2.20E-01	5.12E-02	1.36E-01
6.80E-01	2.20E-01	5.42E-02	1.37E-01
6.90E-01	2.20E-01	5.73E-02	1.38E-01
7.00E-01	2.20E-01	6.05E-02	1.38E-01
7.10E-01	2.20E-01	6.36E-02	1.39E-01
7.20E-01	2.20E-01	6.69E-02	1.40E-01
7.30E-01	2.20E-01	7.02E-02	1.41E-01
7.40E-01	2.20E-01	7.35E-02	1.42E-01
7.50E-01	2.20E-01	7.69E-02	1.43E-01
7.60E-01	2.20E-01	8.04E-02	1.44E-01
7.70E-01	2.20E-01	8.39E-02	1.45E-01
7.80E-01	2.20E-01	8.75E-02	1.46E-01
7.90E-01	2.20E-01	9.11E-02	1.47E-01
8.00E-01	2.20E-01	9.49E-02	1.48E-01
8.10E-01	2.20E-01	9.87E-02	1.50E-01
8.20E-01	2.20E-01	1.03E-01	1.51E-01
8.30E-01	2.20E-01	1.07E-01	1.52E-01
8.40E-01	2.20E-01	1.11E-01	1.54E-01
8.50E-01	2.20E-01	1.15E-01	1.56E-01
8.60E-01	2.20E-01	1.19E-01	1.57E-01
8.70E-01	2.20E-01	1.24E-01	1.59E-01
8.80E-01	2.20E-01	1.29E-01	1.61E-01
8.90E-01	2.20E-01	1.33E-01	1.64E-01
9.00E-01	2.20E-01	1.39E-01	1.66E-01
9.10E-01	2.20E-01	1.44E-01	1.69E-01
9.20E-01	2.20E-01	1.49E-01	1.71E-01
9.30E-01	2.20E-01	1.55E-01	1.75E-01
9.40E-01	2.20E-01	1.62E-01	1.78E-01
9.50E-01	2.20E-01	1.68E-01	1.82E-01
9.60E-01	2.20E-01	1.76E-01	1.87E-01
9.70E-01	2.20E-01	1.84E-01	1.92E-01
9.80E-01	2.20E-01	1.93E-01	1.99E-01
9.90E-01	2.20E-01	2.04E-01	2.07E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	2.30E-01	-1.07E-01	1.23E-01
1.00E-02	2.30E-01	-1.06E-01	1.23E-01
2.00E-02	2.30E-01	-1.04E-01	1.23E-01
3.00E-02	2.30E-01	-1.02E-01	1.23E-01
4.00E-02	2.30E-01	-9.98E-02	1.23E-01
5.00E-02	2.30E-01	-9.78E-02	1.23E-01
6.00E-02	2.30E-01	-9.59E-02	1.23E-01
7.00E-02	2.30E-01	-9.39E-02	1.24E-01
8.00E-02	2.30E-01	-9.19E-02	1.24E-01
9.00E-02	2.30E-01	-8.99E-02	1.24E-01
1.00E-01	2.30E-01	-8.79E-02	1.24E-01
1.10E-01	2.30E-01	-8.58E-02	1.24E-01
1.20E-01	2.30E-01	-8.38E-02	1.24E-0

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	2.40E-01	-1.12E-01	1.28E-01
1.00E-02	2.40E-01	-1.10E-01	1.28E-01
2.00E-02	2.40E-01	-1.08E-01	1.29E-01
3.00E-02	2.40E-01	-1.06E-01	1.29E-01
4.00E-02	2.40E-01	-1.04E-01	1.29E-01
5.00E-02	2.40E-01	-1.02E-01	1.29E-01
6.00E-02	2.40E-01	-9.97E-02	1.29E-01
7.00E-02	2.40E-01	-9.77E-02	1.29E-01
8.00E-02	2.40E-01	-9.56E-02	1.30E-01
9.00E-02	2.40E-01	-9.35E-02	1.30E-01
1.00E-01	2.40E-01	-9.15E-02	1.30E-01
1.10E-01	2.40E-01	-8.94E-02	1.30E-01
1.20E-01	2.40E-01	-8.72E-02	1.30E-01
1.30E-01	2.40E-01	-8.51E-02	1.30E-01
1.40E-01	2.40E-01	-8.30E-02	1.31E-01
1.50E-01	2.40E-01	-8.08E-02	1.31E-01
1.60E-01	2.40E-01	-7.87E-02	1.31E-01
1.70E-01	2.40E-01	-7.65E-02	1.31E-01
1.80E-01	2.40E-01	-7.43E-02	1.31E-01
1.90E-01	2.40E-01	-7.21E-02	1.32E-01
2.00E-01	2.40E-01	-6.99E-02	1.32E-01
2.10E-01	2.40E-01	-6.76E-02	1.32E-01
2.20E-01	2.40E-01	-6.54E-02	1.32E-01
2.30E-01	2.40E-01	-6.31E-02	1.32E-01
2.40E-01	2.40E-01	-6.08E-02	1.33E-01
2.50E-01	2.40E-01	-5.85E-02	1.33E-01
2.60E-01	2.40E-01	-5.62E-02	1.33E-01
2.70E-01	2.40E-01	-5.39E-02	1.33E-01
2.80E-01	2.40E-01	-5.16E-02	1.34E-01
2.90E-01	2.40E-01	-4.92E-02	1.34E-01
3.00E-01	2.40E-01	-4.68E-02	1.34E-01
3.10E-01	2.40E-01	-4.44E-02	1.34E-01
3.20E-01	2.40E-01	-4.20E-02	1.35E-01
3.30E-01	2.40E-01	-3.96E-02	1.35E-01
3.40E-01	2.40E-01	-3.71E-02	1.35E-01
3.50E-01	2.40E-01	-3.47E-02	1.36E-01
3.60E-01	2.40E-01	-3.22E-02	1.36E-01
3.70E-01	2.40E-01	-2.97E-02	1.36E-01
3.80E-01	2.40E-01	-2.72E-02	1.37E-01
3.90E-01	2.40E-01	-2.46E-02	1.37E-01
4.00E-01	2.40E-01	-2.21E-02	1.37E-01
4.10E-01	2.40E-01	-1.95E-02	1.38E-01
4.20E-01	2.40E-01	-1.69E-02	1.38E-01
4.30E-01	2.40E-01	-1.43E-02	1.38E-01
4.40E-01	2.40E-01	-1.16E-02	1.39E-01
4.50E-01	2.40E-01	-8.98E-03	1.39E-01
4.60E-01	2.40E-01	-6.29E-03	1.39E-01
4.70E-01	2.40E-01	-3.58E-03	1.40E-01
4.80E-01	2.40E-01	-8.50E-04	1.40E-01
4.90E-01	2.40E-01	1.91E-03	1.41E-01
5.00E-01	2.40E-01	4.69E-03	1.41E-01
5.10E-01	2.40E-01	7.50E-03	1.42E-01
5.20E-01	2.40E-01	1.03E-02	1.42E-01
5.30E-01	2.40E-01	1.32E-02	1.42E-01
5.40E-01	2.40E-01	1.61E-02	1.43E-01
5.50E-01	2.40E-01	1.90E-02	1.43E-01
5.60E-01	2.40E-01	2.19E-02	1.44E-01
5.70E-01	2.40E-01	2.49E-02	1.44E-01
5.80E-01	2.40E-01	2.79E-02	1.45E-01
5.90E-01	2.40E-01	3.10E-02	1.46E-01
6.00E-01	2.40E-01	3.40E-02	1.46E-01
6.10E-01	2.40E-01	3.72E-02	1.47E-01
6.20E-01	2.40E-01	4.03E-02	1.47E-01
6.30E-01	2.40E-01	4.35E-02	1.48E-01
6.40E-01	2.40E-01	4.67E-02	1.49E-01
6.50E-01	2.40E-01	5.00E-02	1.49E-01
6.60E-01	2.40E-01	5.33E-02	1.50E-01
6.70E-01	2.40E-01	5.66E-02	1.51E-01
6.80E-01	2.40E-01	6.00E-02	1.52E-01
6.90E-01	2.40E-01	6.34E-02	1.53E-01
7.00E-01	2.40E-01	6.69E-02	1.53E-01
7.10E-01	2.40E-01	7.04E-02	1.54E-01
7.20E-01	2.40E-01	7.40E-02	1.55E-01
7.30E-01	2.40E-01	7.77E-02	1.56E-01
7.40E-01	2.40E-01	8.14E-02	1.57E-01
7.50E-01	2.40E-01	8.51E-02	1.58E-01
7.60E-01	2.40E-01	8.90E-02	1.59E-01
7.70E-01	2.40E-01	9.29E-02	1.61E-01
7.80E-01	2.40E-01	9.69E-02	1.62E-01
7.90E-01	2.40E-01	1.01E-01	1.63E-01
8.00E-01	2.40E-01	1.05E-01	1.64E-01
8.10E-01	2.40E-01	1.09E-01	1.66E-01
8.20E-01	2.40E-01	1.14E-01	1.67E-01
8.30E-01	2.40E-01	1.18E-01	1.69E-01
8.40E-01	2.40E-01	1.23E-01	1.71E-01
8.50E-01	2.40E-01	1.27E-01	1.73E-01
8.60E-01	2.40E-01	1.32E-01	1.75E-01
8.70E-01	2.40E-01	1.37E-01	1.77E-01
8.80E-01	2.40E-01	1.42E-01	1.79E-01
8.90E-01	2.40E-01	1.48E-01	1.81E-01
9.00E-01	2.40E-01	1.53E-01	1.84E-01
9.10E-01	2.40E-01	1.59E-01	1.87E-01
9.20E-01	2.40E-01	1.65E-01	1.90E-01
9.30E-01	2.40E-01	1.72E-01	1.93E-01
9.40E-01	2.40E-01	1.78E-01	1.97E-01
9.50E-01	2.40E-01	1.86E-01	2.01E-01
9.60E-01	2.40E-01	1.94E-01	2.06E-01
9.70E-01	2.40E-01	2.02E-01	2.12E-01
9.80E-01	2.40E-01	2.12E-01	2.18E-01
9.90E-01	2.40E-01	2.23E-01	2.27E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	2.50E-01	-1.16E-01	1.34E-01
1.00E-02	2.50E-01	-1.14E-01	1.34E-01
2.00E-02	2.50E-01	-1.12E-01	1.34E-01
3.00E-02	2.50E-01	-1.10E-01	1.34E-01
4.00E-02	2.50E-01	-1.08E-01	1.35E-01
5.00E-02	2.50E-01	-1.06E-01	1.35E-01
6.00E-02	2.50E-01	-1.04E-01	1.35E-01
7.00E-02	2.50E-01	-1.01E-01	1.35E-01
8.00E-02	2.50E-01	-9.93E-02	1.35E-01
9.00E-02	2.50E-01	-9.72E-02	1.36E-01
1.00E-01	2.50E-01	-9.50E-02	1.36E-01
1.10E-01	2.50E-01	-9.28E-02	1.36E-01
1.20E-01	2.50E-01	-9.07E-02	1.36E-01
1.30E-01	2.50E-01	-8.85E-02	1.36E-01
1.40E-01	2.50E-01	-8.62E-02	1.37E-01
1.50E-01	2.50E-01	-8.40E-02	1.37E-01
1.60E-01	2.50E-01	-8.18E-02	1.37E-01
1.70E-01	2.50E-01	-7.95E-02	1.37E-01
1.80E-01	2.50E-01	-7.72E-02	1.37E-01
1.90E-01	2.50E-01	-7.50E-02	1.38E-01
2.00E-01	2.50E-01	-7.26E-02	1.38E-01
2.10E-01	2.50E-01	-7.03E-02	1.38E-01
2.20E-01	2.50E-01	-6.80E-02	1.38E-01
2.30E-01	2.50E-01	-6.56E-02	1.39E-01
2.40E-01	2.50E-01	-6.33E-02	1.39E-01
2.50E-01	2.50E-01	-6.09E-02	1.39E-01
2.60E-01	2.50E-01	-5.85E-02	1.39E-01
2.70E-01	2.50E-01	-5.61E-02	1.40E-01
2.80E-01	2.50E-01	-5.36E-02	1.40E-01
2.90E-01	2.50E-01	-5.12E-02	1.40E-01
3.00E-01	2.50E-01	-4.87E-02	1.40E-01
3.10E-01	2.50E-01	-4.62E-02	1.41E-01
3.20E-01	2.50E-01	-4.37E-02	1.41E-01
3.30E-01	2.50E-01	-4.12E-02	1.41E-01
3.40E-01	2.50E-01	-3.87E-02	1.42E-01
3.50E-01	2.50E-01	-3.61E-02	1.42E-01
3.60E-01	2.50E-01	-3.35E-02	1.42E-01
3.70E-01	2.50E-01	-3.09E-02	1.43E-01
3.80E-01	2.50E-01	-2.83E-02	1.43E-01
3.90E-01	2.50E-01	-2.56E-02	1.43E-01
4.00E-01	2.50E-01	-2.30E-02	1.44E-01
4.10E-01	2.50E-01	-2.03E-02	1.44E-01
4.20E-01	2.50E-01	-1.76E-02	1.44E-01
4.30E-01	2.50E-01	-1.48E-02	1.45E-01
4.40E-01	2.50E-01	-1.21E-02	1.45E-01
4.50E-01	2.50E-01	-9.30E-03	1.46E-01
4.60E-01	2.50E-01	-6.49E-03	1.46E-01
4.70E-01	2.50E-01	-3.67E-03	1.46E-01
4.80E-01	2.50E-01	-8.10E-04	1.47E-01
4.90E-01	2.50E-01	2.07E-03	1.47E-01
5.00E-01	2.50E-01	4.98E-03	1.48E-01
5.10E-01	2.50E-01	7.91E-03	1.48E-01
5.20E-01	2.50E-01	1.09E-02	1.49E-01
5.30E-01	2.50E-01	1.39E-02	1.49E-01
5.40E-01	2.50E-01	1.69E-02	1.50E-01
5.50E-01	2.50E-01	1.99E-02	1.50E-01
5.60E-01	2.50E-01	2.30E-02	1.51E-01
5.70E-01	2.50E-01	2.61E-02	1.52E-01
5.80E-01	2.50E-01	2.93E-02	1.52E-01
5.90E-01	2.50E-01	3.25E-02	1.53E-01
6.00E-01	2.50E-01	3.57E-02	1.53E-01
6.10E-01	2.50E-01	3.89E-02	1.54E-01
6.20E-01	2.50E-01	4.22E-02	1.55E-01
6.30E-01	2.50E-01	4.56E-02	1.55E-01
6.40E-01	2.50E-01	4.89E-02	1.56E-01
6.50E-01	2.50E-01	5.24E-02	1.57E-01
6.60E-01	2.50E-01	5.58E-02	1.58E-01
6.70E-01	2.50E-01	5.93E-02	1.58E-01
6.80E-01	2.50E-01	6.29E-02	1.59E-01
6.90E-01	2.50E-01	6.65E-02	1.60E-01
7.00E-01	2.50E-01	7.01E-02	1.61E-01
7.10E-01	2.50E-01	7.38E-02	1.62E-01
7.20E-01	2.50E-01	7.76E-02	1.63E-01
7.30E-01	2.50E-01	8.14E-02	1.64E-01
7.40E-01	2.50E-01	8.53E-02	1.65E-01
7.50E-01	2.50E-01	8.93E-02	1.66E-01
7.60E-01	2.50E-01	9.33E-02	1.67E-01
7.70E-01	2.50E-01	9.74E-02	1.69E-01
7.80E-01	2.50E-01	1.02E-01	1.70E-01
7.90E-01	2.50E-01	1.06E-01	1.71E-01
8.00E-01	2.50E-01	1.10E-01	1.73E-01
8.10E-01	2.50E-01	1.15E-01	1.74E-01
8.20E-01	2.50E-01	1.19E-01	1.76E-01
8.30E-01	2.50E-01	1.24E-01	1.78E-01
8.40E-01	2.50E-01	1.29E-01	1.79E-01
8.50E-01	2.50E-01	1.34E-01	1.81E-01
8.60E-01	2.50E-01	1.39E-01	1.83E-01
8.70E-01	2.50E-01	1.44E-01	1.85E-01
8.80E-01	2.50E-01	1.49E-01	1.88E-01
8.90E-01	2.50E-01	1.55E-01	1.90E-01
9.00E-01	2.50E-01	1.61E-01	1.93E-01
9.10E-01	2.50E-01	1.67E-01	1.96E-01
9.20E-01	2.50E-01	1.73E-01	1.99E-01
9.30E-01	2.50E-01	1.80E-01	2.03E-01
9.40E-01	2.50E-01	1.87E-01	2.06E-01
9.50E-01	2.50E-01	1.94E-01	2.11E-01
9.60E-01	2.50E-01	2.03E-01	2.16E-01
9.70E-01	2.50E-01	2.12E-01	2.21E-01
9.80E-01	2.50E-01	2.22E-01	2.28E-01
9.90E-01	2.50E-01	2.33E-01	2.37E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	2.60E-01	-1.20E-01	1.40E-01
1.00E-02	2.60E-01	-1.18E-01	1.40E-01
2.00E-02	2.60E-01	-1.16E-01	1.40E-01
3.00E-02	2.60E-01	-1.14E-01	1.40E-01
4.00E-02	2.60E-01	-1.12E-01	1.40E-01
5.00E-02	2.60E-01	-1.10E-01	1.41E-01
6.00E-02	2.60E-01	-1.07E-01	1.41E-01
7.00E-02	2.60E-01	-1.05E-01	1.41E-01
8.00E-02	2.60E-01	-1.03E-01	1.41E-01
9.00E-02	2.60E-01	-1.01E-01	1.41E-01
1.00E-01	2.60E-01	-9.86E-02	1.42E-01
1.10E-01	2.60E-01	-9.63E-02	1.42E-01
1.20E-01	2.60E-01	-9.41E-02	1.42E-0

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	2.70E-01	-1.24E-01	1.46E-01
1.00E-02	2.70E-01	-1.22E-01	1.46E-01
2.00E-02	2.70E-01	-1.20E-01	1.46E-01
3.00E-02	2.70E-01	-1.18E-01	1.46E-01
4.00E-02	2.70E-01	-1.16E-01	1.46E-01
5.00E-02	2.70E-01	-1.13E-01	1.47E-01
6.00E-02	2.70E-01	-1.11E-01	1.47E-01
7.00E-02	2.70E-01	-1.09E-01	1.47E-01
8.00E-02	2.70E-01	-1.07E-01	1.47E-01
9.00E-02	2.70E-01	-1.04E-01	1.47E-01
1.00E-01	2.70E-01	-1.02E-01	1.48E-01
1.10E-01	2.70E-01	-9.98E-02	1.48E-01
1.20E-01	2.70E-01	-9.74E-02	1.48E-01
1.30E-01	2.70E-01	-9.51E-02	1.48E-01
1.40E-01	2.70E-01	-9.27E-02	1.49E-01
1.50E-01	2.70E-01	-9.03E-02	1.49E-01
1.60E-01	2.70E-01	-8.79E-02	1.49E-01
1.70E-01	2.70E-01	-8.55E-02	1.49E-01
1.80E-01	2.70E-01	-8.31E-02	1.50E-01
1.90E-01	2.70E-01	-8.06E-02	1.50E-01
2.00E-01	2.70E-01	-7.82E-02	1.50E-01
2.10E-01	2.70E-01	-7.57E-02	1.50E-01
2.20E-01	2.70E-01	-7.32E-02	1.51E-01
2.30E-01	2.70E-01	-7.07E-02	1.51E-01
2.40E-01	2.70E-01	-6.81E-02	1.51E-01
2.50E-01	2.70E-01	-6.56E-02	1.52E-01
2.60E-01	2.70E-01	-6.30E-02	1.52E-01
2.70E-01	2.70E-01	-6.04E-02	1.52E-01
2.80E-01	2.70E-01	-5.78E-02	1.53E-01
2.90E-01	2.70E-01	-5.52E-02	1.53E-01
3.00E-01	2.70E-01	-5.25E-02	1.53E-01
3.10E-01	2.70E-01	-4.98E-02	1.53E-01
3.20E-01	2.70E-01	-4.71E-02	1.54E-01
3.30E-01	2.70E-01	-4.44E-02	1.54E-01
3.40E-01	2.70E-01	-4.17E-02	1.55E-01
3.50E-01	2.70E-01	-3.89E-02	1.55E-01
3.60E-01	2.70E-01	-3.61E-02	1.55E-01
3.70E-01	2.70E-01	-3.33E-02	1.56E-01
3.80E-01	2.70E-01	-3.05E-02	1.56E-01
3.90E-01	2.70E-01	-2.76E-02	1.56E-01
4.00E-01	2.70E-01	-2.47E-02	1.57E-01
4.10E-01	2.70E-01	-2.18E-02	1.57E-01
4.20E-01	2.70E-01	-1.89E-02	1.58E-01
4.30E-01	2.70E-01	-1.59E-02	1.58E-01
4.40E-01	2.70E-01	-1.30E-02	1.59E-01
4.50E-01	2.70E-01	-9.94E-03	1.59E-01
4.60E-01	2.70E-01	-6.90E-03	1.60E-01
4.70E-01	2.70E-01	-3.84E-03	1.60E-01
4.80E-01	2.70E-01	-7.38E-04	1.61E-01
4.90E-01	2.70E-01	2.39E-03	1.61E-01
5.00E-01	2.70E-01	5.55E-03	1.62E-01
5.10E-01	2.70E-01	8.74E-03	1.62E-01
5.20E-01	2.70E-01	1.20E-02	1.63E-01
5.30E-01	2.70E-01	1.52E-02	1.63E-01
5.40E-01	2.70E-01	1.85E-02	1.64E-01
5.50E-01	2.70E-01	2.18E-02	1.65E-01
5.60E-01	2.70E-01	2.52E-02	1.65E-01
5.70E-01	2.70E-01	2.86E-02	1.66E-01
5.80E-01	2.70E-01	3.20E-02	1.66E-01
5.90E-01	2.70E-01	3.55E-02	1.67E-01
6.00E-01	2.70E-01	3.90E-02	1.68E-01
6.10E-01	2.70E-01	4.25E-02	1.69E-01
6.20E-01	2.70E-01	4.61E-02	1.69E-01
6.30E-01	2.70E-01	4.98E-02	1.70E-01
6.40E-01	2.70E-01	5.35E-02	1.71E-01
6.50E-01	2.70E-01	5.72E-02	1.72E-01
6.60E-01	2.70E-01	6.10E-02	1.73E-01
6.70E-01	2.70E-01	6.48E-02	1.74E-01
6.80E-01	2.70E-01	6.87E-02	1.75E-01
6.90E-01	2.70E-01	7.26E-02	1.76E-01
7.00E-01	2.70E-01	7.66E-02	1.77E-01
7.10E-01	2.70E-01	8.07E-02	1.78E-01
7.20E-01	2.70E-01	8.48E-02	1.79E-01
7.30E-01	2.70E-01	8.90E-02	1.80E-01
7.40E-01	2.70E-01	9.33E-02	1.81E-01
7.50E-01	2.70E-01	9.76E-02	1.82E-01
7.60E-01	2.70E-01	1.02E-01	1.84E-01
7.70E-01	2.70E-01	1.07E-01	1.85E-01
7.80E-01	2.70E-01	1.11E-01	1.86E-01
7.90E-01	2.70E-01	1.16E-01	1.88E-01
8.00E-01	2.70E-01	1.21E-01	1.89E-01
8.10E-01	2.70E-01	1.25E-01	1.91E-01
8.20E-01	2.70E-01	1.30E-01	1.93E-01
8.30E-01	2.70E-01	1.36E-01	1.95E-01
8.40E-01	2.70E-01	1.41E-01	1.97E-01
8.50E-01	2.70E-01	1.46E-01	1.99E-01
8.60E-01	2.70E-01	1.52E-01	2.01E-01
8.70E-01	2.70E-01	1.57E-01	2.03E-01
8.80E-01	2.70E-01	1.63E-01	2.06E-01
8.90E-01	2.70E-01	1.69E-01	2.08E-01
9.00E-01	2.70E-01	1.76E-01	2.11E-01
9.10E-01	2.70E-01	1.82E-01	2.14E-01
9.20E-01	2.70E-01	1.89E-01	2.18E-01
9.30E-01	2.70E-01	1.96E-01	2.21E-01
9.40E-01	2.70E-01	2.04E-01	2.26E-01
9.50E-01	2.70E-01	2.12E-01	2.30E-01
9.60E-01	2.70E-01	2.21E-01	2.35E-01
9.70E-01	2.70E-01	2.30E-01	2.41E-01
9.80E-01	2.70E-01	2.41E-01	2.48E-01
9.90E-01	2.70E-01	2.53E-01	2.57E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	2.80E-01	-1.29E-01	1.51E-01
1.00E-02	2.80E-01	-1.26E-01	1.52E-01
2.00E-02	2.80E-01	-1.24E-01	1.52E-01
3.00E-02	2.80E-01	-1.22E-01	1.52E-01
4.00E-02	2.80E-01	-1.20E-01	1.52E-01
5.00E-02	2.80E-01	-1.17E-01	1.53E-01
6.00E-02	2.80E-01	-1.15E-01	1.53E-01
7.00E-02	2.80E-01	-1.13E-01	1.53E-01
8.00E-02	2.80E-01	-1.10E-01	1.53E-01
9.00E-02	2.80E-01	-1.08E-01	1.53E-01
1.00E-01	2.80E-01	-1.06E-01	1.54E-01
1.10E-01	2.80E-01	-1.03E-01	1.54E-01
1.20E-01	2.80E-01	-1.01E-01	1.54E-01
1.30E-01	2.80E-01	-9.83E-02	1.54E-01
1.40E-01	2.80E-01	-9.59E-02	1.55E-01
1.50E-01	2.80E-01	-9.35E-02	1.55E-01
1.60E-01	2.80E-01	-9.10E-02	1.55E-01
1.70E-01	2.80E-01	-8.85E-02	1.56E-01
1.80E-01	2.80E-01	-8.60E-02	1.56E-01
1.90E-01	2.80E-01	-8.35E-02	1.56E-01
2.00E-01	2.80E-01	-8.09E-02	1.56E-01
2.10E-01	2.80E-01	-7.84E-02	1.57E-01
2.20E-01	2.80E-01	-7.58E-02	1.57E-01
2.30E-01	2.80E-01	-7.32E-02	1.57E-01
2.40E-01	2.80E-01	-7.06E-02	1.58E-01
2.50E-01	2.80E-01	-6.79E-02	1.58E-01
2.60E-01	2.80E-01	-6.52E-02	1.58E-01
2.70E-01	2.80E-01	-6.26E-02	1.59E-01
2.80E-01	2.80E-01	-5.99E-02	1.59E-01
2.90E-01	2.80E-01	-5.71E-02	1.59E-01
3.00E-01	2.80E-01	-5.44E-02	1.60E-01
3.10E-01	2.80E-01	-5.16E-02	1.60E-01
3.20E-01	2.80E-01	-4.88E-02	1.60E-01
3.30E-01	2.80E-01	-4.60E-02	1.61E-01
3.40E-01	2.80E-01	-4.32E-02	1.61E-01
3.50E-01	2.80E-01	-4.03E-02	1.61E-01
3.60E-01	2.80E-01	-3.74E-02	1.62E-01
3.70E-01	2.80E-01	-3.45E-02	1.62E-01
3.80E-01	2.80E-01	-3.16E-02	1.63E-01
3.90E-01	2.80E-01	-2.86E-02	1.63E-01
4.00E-01	2.80E-01	-2.56E-02	1.64E-01
4.10E-01	2.80E-01	-2.26E-02	1.64E-01
4.20E-01	2.80E-01	-1.96E-02	1.64E-01
4.30E-01	2.80E-01	-1.65E-02	1.65E-01
4.40E-01	2.80E-01	-1.34E-02	1.65E-01
4.50E-01	2.80E-01	-1.03E-02	1.66E-01
4.60E-01	2.80E-01	-7.11E-03	1.66E-01
4.70E-01	2.80E-01	-3.93E-03	1.67E-01
4.80E-01	2.80E-01	-7.07E-04	1.67E-01
4.90E-01	2.80E-01	2.54E-03	1.68E-01
5.00E-01	2.80E-01	5.82E-03	1.69E-01
5.10E-01	2.80E-01	9.14E-03	1.69E-01
5.20E-01	2.80E-01	1.25E-02	1.70E-01
5.30E-01	2.80E-01	1.59E-02	1.70E-01
5.40E-01	2.80E-01	1.93E-02	1.71E-01
5.50E-01	2.80E-01	2.28E-02	1.72E-01
5.60E-01	2.80E-01	2.62E-02	1.72E-01
5.70E-01	2.80E-01	2.98E-02	1.73E-01
5.80E-01	2.80E-01	3.34E-02	1.74E-01
5.90E-01	2.80E-01	3.70E-02	1.74E-01
6.00E-01	2.80E-01	4.06E-02	1.75E-01
6.10E-01	2.80E-01	4.43E-02	1.76E-01
6.20E-01	2.80E-01	4.81E-02	1.77E-01
6.30E-01	2.80E-01	5.19E-02	1.78E-01
6.40E-01	2.80E-01	5.57E-02	1.79E-01
6.50E-01	2.80E-01	5.96E-02	1.79E-01
6.60E-01	2.80E-01	6.36E-02	1.80E-01
6.70E-01	2.80E-01	6.76E-02	1.81E-01
6.80E-01	2.80E-01	7.16E-02	1.82E-01
6.90E-01	2.80E-01	7.57E-02	1.83E-01
7.00E-01	2.80E-01	7.99E-02	1.84E-01
7.10E-01	2.80E-01	8.41E-02	1.85E-01
7.20E-01	2.80E-01	8.84E-02	1.87E-01
7.30E-01	2.80E-01	9.28E-02	1.88E-01
7.40E-01	2.80E-01	9.73E-02	1.89E-01
7.50E-01	2.80E-01	1.02E-01	1.90E-01
7.60E-01	2.80E-01	1.06E-01	1.92E-01
7.70E-01	2.80E-01	1.11E-01	1.93E-01
7.80E-01	2.80E-01	1.16E-01	1.95E-01
7.90E-01	2.80E-01	1.21E-01	1.96E-01
8.00E-01	2.80E-01	1.26E-01	1.98E-01
8.10E-01	2.80E-01	1.31E-01	2.00E-01
8.20E-01	2.80E-01	1.36E-01	2.01E-01
8.30E-01	2.80E-01	1.41E-01	2.03E-01
8.40E-01	2.80E-01	1.47E-01	2.05E-01
8.50E-01	2.80E-01	1.52E-01	2.08E-01
8.60E-01	2.80E-01	1.58E-01	2.10E-01
8.70E-01	2.80E-01	1.64E-01	2.12E-01
8.80E-01	2.80E-01	1.70E-01	2.15E-01
8.90E-01	2.80E-01	1.77E-01	2.18E-01
9.00E-01	2.80E-01	1.83E-01	2.21E-01
9.10E-01	2.80E-01	1.90E-01	2.24E-01
9.20E-01	2.80E-01	1.97E-01	2.27E-01
9.30E-01	2.80E-01	2.05E-01	2.31E-01
9.40E-01	2.80E-01	2.12E-01	2.35E-01
9.50E-01	2.80E-01	2.21E-01	2.40E-01
9.60E-01	2.80E-01	2.30E-01	2.45E-01
9.70E-01	2.80E-01	2.39E-01	2.51E-01
9.80E-01	2.80E-01	2.50E-01	2.58E-01
9.90E-01	2.80E-01	2.63E-01	2.67E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	2.90E-01	-1.33E-01	1.57E-01
1.00E-02	2.90E-01	-1.30E-01	1.58E-01
2.00E-02	2.90E-01	-1.28E-01	1.58E-01
3.00E-02	2.90E-01	-1.26E-01	1.58E-01
4.00E-02	2.90E-01	-1.23E-01	1.58E-01
5.00E-02	2.90E-01	-1.21E-01	1.59E-01
6.00E-02	2.90E-01	-1.19E-01	1.59E-01
7.00E-02	2.90E-01	-1.16E-01	1.59E-01
8.00E-02	2.90E-01	-1.14E-01	1.59E-01
9.00E-02	2.90E-01	-1.11E-01	1.60E-01
1.00E-01	2.90E-01	-1.09E-01	1.60E-01
1.10E-01	2.90E-01	-1.07E-01	1.60E-01
1.20E-01	2.90E-01	-1.04E-01	1.60E

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	3.00E-01	-1.37E-01	1.63E-01
1.00E-02	3.00E-01	-1.34E-01	1.64E-01
2.00E-02	3.00E-01	-1.32E-01	1.64E-01
3.00E-02	3.00E-01	-1.30E-01	1.64E-01
4.00E-02	3.00E-01	-1.27E-01	1.64E-01
5.00E-02	3.00E-01	-1.25E-01	1.65E-01
6.00E-02	3.00E-01	-1.22E-01	1.65E-01
7.00E-02	3.00E-01	-1.20E-01	1.65E-01
8.00E-02	3.00E-01	-1.17E-01	1.65E-01
9.00E-02	3.00E-01	-1.15E-01	1.66E-01
1.00E-01	3.00E-01	-1.12E-01	1.66E-01
1.10E-01	3.00E-01	-1.10E-01	1.66E-01
1.20E-01	3.00E-01	-1.07E-01	1.66E-01
1.30E-01	3.00E-01	-1.05E-01	1.67E-01
1.40E-01	3.00E-01	-1.02E-01	1.67E-01
1.50E-01	3.00E-01	-9.96E-02	1.67E-01
1.60E-01	3.00E-01	-9.70E-02	1.68E-01
1.70E-01	3.00E-01	-9.44E-02	1.68E-01
1.80E-01	3.00E-01	-9.17E-02	1.68E-01
1.90E-01	3.00E-01	-8.91E-02	1.69E-01
2.00E-01	3.00E-01	-8.64E-02	1.69E-01
2.10E-01	3.00E-01	-8.36E-02	1.69E-01
2.20E-01	3.00E-01	-8.09E-02	1.70E-01
2.30E-01	3.00E-01	-7.81E-02	1.70E-01
2.40E-01	3.00E-01	-7.53E-02	1.70E-01
2.50E-01	3.00E-01	-7.25E-02	1.71E-01
2.60E-01	3.00E-01	-6.97E-02	1.71E-01
2.70E-01	3.00E-01	-6.68E-02	1.71E-01
2.80E-01	3.00E-01	-6.40E-02	1.72E-01
2.90E-01	3.00E-01	-6.11E-02	1.72E-01
3.00E-01	3.00E-01	-5.81E-02	1.73E-01
3.10E-01	3.00E-01	-5.52E-02	1.73E-01
3.20E-01	3.00E-01	-5.22E-02	1.73E-01
3.30E-01	3.00E-01	-4.92E-02	1.74E-01
3.40E-01	3.00E-01	-4.62E-02	1.74E-01
3.50E-01	3.00E-01	-4.31E-02	1.75E-01
3.60E-01	3.00E-01	-4.00E-02	1.75E-01
3.70E-01	3.00E-01	-3.69E-02	1.76E-01
3.80E-01	3.00E-01	-3.38E-02	1.76E-01
3.90E-01	3.00E-01	-3.06E-02	1.77E-01
4.00E-01	3.00E-01	-2.74E-02	1.77E-01
4.10E-01	3.00E-01	-2.42E-02	1.78E-01
4.20E-01	3.00E-01	-2.09E-02	1.78E-01
4.30E-01	3.00E-01	-1.76E-02	1.79E-01
4.40E-01	3.00E-01	-1.43E-02	1.79E-01
4.50E-01	3.00E-01	-1.09E-02	1.80E-01
4.60E-01	3.00E-01	-7.55E-03	1.80E-01
4.70E-01	3.00E-01	-4.12E-03	1.81E-01
4.80E-01	3.00E-01	-6.61E-04	1.82E-01
4.90E-01	3.00E-01	2.83E-03	1.82E-01
5.00E-01	3.00E-01	6.37E-03	1.83E-01
5.10E-01	3.00E-01	9.93E-03	1.83E-01
5.20E-01	3.00E-01	1.35E-02	1.84E-01
5.30E-01	3.00E-01	1.72E-02	1.85E-01
5.40E-01	3.00E-01	2.09E-02	1.86E-01
5.50E-01	3.00E-01	2.46E-02	1.86E-01
5.60E-01	3.00E-01	2.84E-02	1.87E-01
5.70E-01	3.00E-01	3.22E-02	1.88E-01
5.80E-01	3.00E-01	3.60E-02	1.89E-01
5.90E-01	3.00E-01	4.00E-02	1.89E-01
6.00E-01	3.00E-01	4.39E-02	1.90E-01
6.10E-01	3.00E-01	4.79E-02	1.91E-01
6.20E-01	3.00E-01	5.20E-02	1.92E-01
6.30E-01	3.00E-01	5.61E-02	1.93E-01
6.40E-01	3.00E-01	6.02E-02	1.94E-01
6.50E-01	3.00E-01	6.44E-02	1.95E-01
6.60E-01	3.00E-01	6.87E-02	1.96E-01
6.70E-01	3.00E-01	7.30E-02	1.97E-01
6.80E-01	3.00E-01	7.74E-02	1.98E-01
6.90E-01	3.00E-01	8.19E-02	1.99E-01
7.00E-01	3.00E-01	8.64E-02	2.00E-01
7.10E-01	3.00E-01	9.10E-02	2.02E-01
7.20E-01	3.00E-01	9.57E-02	2.03E-01
7.30E-01	3.00E-01	1.00E-01	2.04E-01
7.40E-01	3.00E-01	1.05E-01	2.06E-01
7.50E-01	3.00E-01	1.10E-01	2.07E-01
7.60E-01	3.00E-01	1.15E-01	2.08E-01
7.70E-01	3.00E-01	1.20E-01	2.10E-01
7.80E-01	3.00E-01	1.25E-01	2.12E-01
7.90E-01	3.00E-01	1.31E-01	2.13E-01
8.00E-01	3.00E-01	1.36E-01	2.15E-01
8.10E-01	3.00E-01	1.42E-01	2.17E-01
8.20E-01	3.00E-01	1.47E-01	2.19E-01
8.30E-01	3.00E-01	1.53E-01	2.21E-01
8.40E-01	3.00E-01	1.59E-01	2.23E-01
8.50E-01	3.00E-01	1.65E-01	2.25E-01
8.60E-01	3.00E-01	1.71E-01	2.28E-01
8.70E-01	3.00E-01	1.78E-01	2.30E-01
8.80E-01	3.00E-01	1.84E-01	2.33E-01
8.90E-01	3.00E-01	1.91E-01	2.36E-01
9.00E-01	3.00E-01	1.98E-01	2.39E-01
9.10E-01	3.00E-01	2.05E-01	2.43E-01
9.20E-01	3.00E-01	2.13E-01	2.46E-01
9.30E-01	3.00E-01	2.21E-01	2.50E-01
9.40E-01	3.00E-01	2.29E-01	2.55E-01
9.50E-01	3.00E-01	2.38E-01	2.59E-01
9.60E-01	3.00E-01	2.48E-01	2.65E-01
9.70E-01	3.00E-01	2.58E-01	2.71E-01
9.80E-01	3.00E-01	2.69E-01	2.78E-01
9.90E-01	3.00E-01	2.82E-01	2.87E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	3.10E-01	-1.41E-01	1.69E-01
1.00E-02	3.10E-01	-1.38E-01	1.70E-01
2.00E-02	3.10E-01	-1.36E-01	1.70E-01
3.00E-02	3.10E-01	-1.33E-01	1.70E-01
4.00E-02	3.10E-01	-1.31E-01	1.70E-01
5.00E-02	3.10E-01	-1.28E-01	1.71E-01
6.00E-02	3.10E-01	-1.26E-01	1.71E-01
7.00E-02	3.10E-01	-1.23E-01	1.71E-01
8.00E-02	3.10E-01	-1.21E-01	1.72E-01
9.00E-02	3.10E-01	-1.18E-01	1.72E-01
1.00E-01	3.10E-01	-1.16E-01	1.72E-01
1.10E-01	3.10E-01	-1.13E-01	1.72E-01
1.20E-01	3.10E-01	-1.11E-01	1.73E-01
1.30E-01	3.10E-01	-1.08E-01	1.73E-01
1.40E-01	3.10E-01	-1.05E-01	1.73E-01
1.50E-01	3.10E-01	-1.03E-01	1.74E-01
1.60E-01	3.10E-01	-1.00E-01	1.74E-01
1.70E-01	3.10E-01	-9.73E-02	1.74E-01
1.80E-01	3.10E-01	-9.46E-02	1.75E-01
1.90E-01	3.10E-01	-9.18E-02	1.75E-01
2.00E-01	3.10E-01	-8.91E-02	1.75E-01
2.10E-01	3.10E-01	-8.63E-02	1.76E-01
2.20E-01	3.10E-01	-8.34E-02	1.76E-01
2.30E-01	3.10E-01	-8.06E-02	1.76E-01
2.40E-01	3.10E-01	-7.77E-02	1.77E-01
2.50E-01	3.10E-01	-7.48E-02	1.77E-01
2.60E-01	3.10E-01	-7.19E-02	1.78E-01
2.70E-01	3.10E-01	-6.90E-02	1.78E-01
2.80E-01	3.10E-01	-6.60E-02	1.78E-01
2.90E-01	3.10E-01	-6.30E-02	1.79E-01
3.00E-01	3.10E-01	-6.00E-02	1.79E-01
3.10E-01	3.10E-01	-5.70E-02	1.80E-01
3.20E-01	3.10E-01	-5.39E-02	1.80E-01
3.30E-01	3.10E-01	-5.08E-02	1.81E-01
3.40E-01	3.10E-01	-4.77E-02	1.81E-01
3.50E-01	3.10E-01	-4.45E-02	1.82E-01
3.60E-01	3.10E-01	-4.13E-02	1.82E-01
3.70E-01	3.10E-01	-3.81E-02	1.82E-01
3.80E-01	3.10E-01	-3.49E-02	1.83E-01
3.90E-01	3.10E-01	-3.16E-02	1.84E-01
4.00E-01	3.10E-01	-2.83E-02	1.84E-01
4.10E-01	3.10E-01	-2.50E-02	1.85E-01
4.20E-01	3.10E-01	-2.16E-02	1.85E-01
4.30E-01	3.10E-01	-1.82E-02	1.86E-01
4.40E-01	3.10E-01	-1.47E-02	1.86E-01
4.50E-01	3.10E-01	-1.13E-02	1.87E-01
4.60E-01	3.10E-01	-7.77E-03	1.87E-01
4.70E-01	3.10E-01	-4.23E-03	1.88E-01
4.80E-01	3.10E-01	-6.48E-04	1.89E-01
4.90E-01	3.10E-01	2.97E-03	1.89E-01
5.00E-01	3.10E-01	6.62E-03	1.90E-01
5.10E-01	3.10E-01	1.03E-02	1.91E-01
5.20E-01	3.10E-01	1.41E-02	1.91E-01
5.30E-01	3.10E-01	1.78E-02	1.92E-01
5.40E-01	3.10E-01	2.17E-02	1.93E-01
5.50E-01	3.10E-01	2.55E-02	1.94E-01
5.60E-01	3.10E-01	2.94E-02	1.94E-01
5.70E-01	3.10E-01	3.34E-02	1.95E-01
5.80E-01	3.10E-01	3.74E-02	1.96E-01
5.90E-01	3.10E-01	4.14E-02	1.97E-01
6.00E-01	3.10E-01	4.55E-02	1.98E-01
6.10E-01	3.10E-01	4.97E-02	1.99E-01
6.20E-01	3.10E-01	5.39E-02	2.00E-01
6.30E-01	3.10E-01	5.82E-02	2.01E-01
6.40E-01	3.10E-01	6.25E-02	2.02E-01
6.50E-01	3.10E-01	6.68E-02	2.03E-01
6.60E-01	3.10E-01	7.13E-02	2.04E-01
6.70E-01	3.10E-01	7.58E-02	2.05E-01
6.80E-01	3.10E-01	8.03E-02	2.06E-01
6.90E-01	3.10E-01	8.50E-02	2.07E-01
7.00E-01	3.10E-01	8.97E-02	2.08E-01
7.10E-01	3.10E-01	9.45E-02	2.10E-01
7.20E-01	3.10E-01	9.93E-02	2.11E-01
7.30E-01	3.10E-01	1.04E-01	2.12E-01
7.40E-01	3.10E-01	1.09E-01	2.14E-01
7.50E-01	3.10E-01	1.14E-01	2.15E-01
7.60E-01	3.10E-01	1.20E-01	2.17E-01
7.70E-01	3.10E-01	1.25E-01	2.18E-01
7.80E-01	3.10E-01	1.30E-01	2.20E-01
7.90E-01	3.10E-01	1.36E-01	2.22E-01
8.00E-01	3.10E-01	1.41E-01	2.24E-01
8.10E-01	3.10E-01	1.47E-01	2.26E-01
8.20E-01	3.10E-01	1.53E-01	2.28E-01
8.30E-01	3.10E-01	1.59E-01	2.30E-01
8.40E-01	3.10E-01	1.65E-01	2.32E-01
8.50E-01	3.10E-01	1.71E-01	2.34E-01
8.60E-01	3.10E-01	1.78E-01	2.37E-01
8.70E-01	3.10E-01	1.84E-01	2.40E-01
8.80E-01	3.10E-01	1.91E-01	2.42E-01
8.90E-01	3.10E-01	1.98E-01	2.45E-01
9.00E-01	3.10E-01	2.06E-01	2.49E-01
9.10E-01	3.10E-01	2.13E-01	2.52E-01
9.20E-01	3.10E-01	2.21E-01	2.56E-01
9.30E-01	3.10E-01	2.29E-01	2.60E-01
9.40E-01	3.10E-01	2.38E-01	2.64E-01
9.50E-01	3.10E-01	2.47E-01	2.69E-01
9.60E-01	3.10E-01	2.57E-01	2.75E-01
9.70E-01	3.10E-01	2.67E-01	2.81E-01
9.80E-01	3.10E-01	2.79E-01	2.88E-01
9.90E-01	3.10E-01	2.92E-01	2.97E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	3.20E-01	-1.45E-01	1.75E-01
1.00E-02	3.20E-01	-1.42E-01	1.76E-01
2.00E-02	3.20E-01	-1.40E-01	1.76E-01
3.00E-02	3.20E-01	-1.37E-01	1.76E-01
4.00E-02	3.20E-01	-1.35E-01	1.76E-01
5.00E-02	3.20E-01	-1.32E-01	1.77E-01
6.00E-02	3.20E-01	-1.30E-01	1.77E-01
7.00E-02	3.20E-01	-1.27E-01	1.77E-01
8.00E-02	3.20E-01	-1.24E-01	1.78E-01
9.00E-02	3.20E-01	-1.22E-01	1.78E-01
1.00E-01	3.20E-01	-1.19E-01	1.78E-01
1.10E-01	3.20E-01	-1.17E-01	1.79E-01
1.20E-01	3.20E-01	-1.14E-01	1.79E

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	3.30E-01	-1.49E-01	1.81E-01
1.00E-02	3.30E-01	-1.46E-01	1.82E-01
2.00E-02	3.30E-01	-1.43E-01	1.82E-01
3.00E-02	3.30E-01	-1.41E-01	1.82E-01
4.00E-02	3.30E-01	-1.38E-01	1.83E-01
5.00E-02	3.30E-01	-1.36E-01	1.83E-01
6.00E-02	3.30E-01	-1.33E-01	1.83E-01
7.00E-02	3.30E-01	-1.31E-01	1.84E-01
8.00E-02	3.30E-01	-1.28E-01	1.84E-01
9.00E-02	3.30E-01	-1.25E-01	1.84E-01
1.00E-01	3.30E-01	-1.23E-01	1.85E-01
1.10E-01	3.30E-01	-1.20E-01	1.85E-01
1.20E-01	3.30E-01	-1.17E-01	1.85E-01
1.30E-01	3.30E-01	-1.14E-01	1.86E-01
1.40E-01	3.30E-01	-1.12E-01	1.86E-01
1.50E-01	3.30E-01	-1.09E-01	1.86E-01
1.60E-01	3.30E-01	-1.06E-01	1.87E-01
1.70E-01	3.30E-01	-1.03E-01	1.87E-01
1.80E-01	3.30E-01	-1.00E-01	1.87E-01
1.90E-01	3.30E-01	-9.73E-02	1.88E-01
2.00E-01	3.30E-01	-9.44E-02	1.88E-01
2.10E-01	3.30E-01	-9.14E-02	1.89E-01
2.20E-01	3.30E-01	-8.85E-02	1.89E-01
2.30E-01	3.30E-01	-8.55E-02	1.89E-01
2.40E-01	3.30E-01	-8.24E-02	1.90E-01
2.50E-01	3.30E-01	-7.94E-02	1.90E-01
2.60E-01	3.30E-01	-7.63E-02	1.91E-01
2.70E-01	3.30E-01	-7.32E-02	1.91E-01
2.80E-01	3.30E-01	-7.01E-02	1.92E-01
2.90E-01	3.30E-01	-6.69E-02	1.92E-01
3.00E-01	3.30E-01	-6.37E-02	1.93E-01
3.10E-01	3.30E-01	-6.05E-02	1.93E-01
3.20E-01	3.30E-01	-5.72E-02	1.94E-01
3.30E-01	3.30E-01	-5.40E-02	1.94E-01
3.40E-01	3.30E-01	-5.07E-02	1.95E-01
3.50E-01	3.30E-01	-4.73E-02	1.95E-01
3.60E-01	3.30E-01	-4.39E-02	1.96E-01
3.70E-01	3.30E-01	-4.05E-02	1.96E-01
3.80E-01	3.30E-01	-3.71E-02	1.97E-01
3.90E-01	3.30E-01	-3.36E-02	1.97E-01
4.00E-01	3.30E-01	-3.01E-02	1.98E-01
4.10E-01	3.30E-01	-2.65E-02	1.99E-01
4.20E-01	3.30E-01	-2.30E-02	1.99E-01
4.30E-01	3.30E-01	-1.93E-02	2.00E-01
4.40E-01	3.30E-01	-1.57E-02	2.01E-01
4.50E-01	3.30E-01	-1.20E-02	2.01E-01
4.60E-01	3.30E-01	-8.24E-03	2.02E-01
4.70E-01	3.30E-01	-4.46E-03	2.03E-01
4.80E-01	3.30E-01	-6.45E-04	2.03E-01
4.90E-01	3.30E-01	3.21E-03	2.04E-01
5.00E-01	3.30E-01	7.12E-03	2.05E-01
5.10E-01	3.30E-01	1.11E-02	2.05E-01
5.20E-01	3.30E-01	1.51E-02	2.06E-01
5.30E-01	3.30E-01	1.91E-02	2.07E-01
5.40E-01	3.30E-01	2.32E-02	2.08E-01
5.50E-01	3.30E-01	2.73E-02	2.09E-01
5.60E-01	3.30E-01	3.15E-02	2.10E-01
5.70E-01	3.30E-01	3.57E-02	2.11E-01
5.80E-01	3.30E-01	4.00E-02	2.11E-01
5.90E-01	3.30E-01	4.44E-02	2.12E-01
6.00E-01	3.30E-01	4.87E-02	2.13E-01
6.10E-01	3.30E-01	5.32E-02	2.14E-01
6.20E-01	3.30E-01	5.77E-02	2.15E-01
6.30E-01	3.30E-01	6.23E-02	2.16E-01
6.40E-01	3.30E-01	6.69E-02	2.18E-01
6.50E-01	3.30E-01	7.16E-02	2.19E-01
6.60E-01	3.30E-01	7.64E-02	2.20E-01
6.70E-01	3.30E-01	8.12E-02	2.21E-01
6.80E-01	3.30E-01	8.61E-02	2.22E-01
6.90E-01	3.30E-01	9.11E-02	2.24E-01
7.00E-01	3.30E-01	9.62E-02	2.25E-01
7.10E-01	3.30E-01	1.01E-01	2.26E-01
7.20E-01	3.30E-01	1.07E-01	2.28E-01
7.30E-01	3.30E-01	1.12E-01	2.29E-01
7.40E-01	3.30E-01	1.17E-01	2.31E-01
7.50E-01	3.30E-01	1.23E-01	2.32E-01
7.60E-01	3.30E-01	1.28E-01	2.34E-01
7.70E-01	3.30E-01	1.34E-01	2.36E-01
7.80E-01	3.30E-01	1.40E-01	2.38E-01
7.90E-01	3.30E-01	1.46E-01	2.39E-01
8.00E-01	3.30E-01	1.52E-01	2.41E-01
8.10E-01	3.30E-01	1.58E-01	2.43E-01
8.20E-01	3.30E-01	1.64E-01	2.46E-01
8.30E-01	3.30E-01	1.71E-01	2.48E-01
8.40E-01	3.30E-01	1.77E-01	2.50E-01
8.50E-01	3.30E-01	1.84E-01	2.53E-01
8.60E-01	3.30E-01	1.91E-01	2.55E-01
8.70E-01	3.30E-01	1.98E-01	2.58E-01
8.80E-01	3.30E-01	2.05E-01	2.61E-01
8.90E-01	3.30E-01	2.13E-01	2.64E-01
9.00E-01	3.30E-01	2.21E-01	2.68E-01
9.10E-01	3.30E-01	2.29E-01	2.71E-01
9.20E-01	3.30E-01	2.37E-01	2.75E-01
9.30E-01	3.30E-01	2.46E-01	2.79E-01
9.40E-01	3.30E-01	2.55E-01	2.84E-01
9.50E-01	3.30E-01	2.65E-01	2.89E-01
9.60E-01	3.30E-01	2.75E-01	2.94E-01
9.70E-01	3.30E-01	2.86E-01	3.01E-01
9.80E-01	3.30E-01	2.98E-01	3.08E-01
9.90E-01	3.30E-01	3.12E-01	3.17E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	3.40E-01	-1.52E-01	1.88E-01
1.00E-02	3.40E-01	-1.50E-01	1.88E-01
2.00E-02	3.40E-01	-1.47E-01	1.88E-01
3.00E-02	3.40E-01	-1.45E-01	1.89E-01
4.00E-02	3.40E-01	-1.42E-01	1.89E-01
5.00E-02	3.40E-01	-1.39E-01	1.89E-01
6.00E-02	3.40E-01	-1.37E-01	1.90E-01
7.00E-02	3.40E-01	-1.34E-01	1.90E-01
8.00E-02	3.40E-01	-1.31E-01	1.90E-01
9.00E-02	3.40E-01	-1.29E-01	1.91E-01
1.00E-01	3.40E-01	-1.26E-01	1.91E-01
1.10E-01	3.40E-01	-1.23E-01	1.91E-01
1.20E-01	3.40E-01	-1.20E-01	1.92E-01
1.30E-01	3.40E-01	-1.17E-01	1.92E-01
1.40E-01	3.40E-01	-1.15E-01	1.92E-01
1.50E-01	3.40E-01	-1.12E-01	1.93E-01
1.60E-01	3.40E-01	-1.09E-01	1.93E-01
1.70E-01	3.40E-01	-1.06E-01	1.94E-01
1.80E-01	3.40E-01	-1.03E-01	1.94E-01
1.90E-01	3.40E-01	-1.00E-01	1.94E-01
2.00E-01	3.40E-01	-9.70E-02	1.95E-01
2.10E-01	3.40E-01	-9.40E-02	1.95E-01
2.20E-01	3.40E-01	-9.10E-02	1.96E-01
2.30E-01	3.40E-01	-8.79E-02	1.96E-01
2.40E-01	3.40E-01	-8.48E-02	1.97E-01
2.50E-01	3.40E-01	-8.17E-02	1.97E-01
2.60E-01	3.40E-01	-7.85E-02	1.97E-01
2.70E-01	3.40E-01	-7.53E-02	1.98E-01
2.80E-01	3.40E-01	-7.21E-02	1.98E-01
2.90E-01	3.40E-01	-6.88E-02	1.99E-01
3.00E-01	3.40E-01	-6.56E-02	1.99E-01
3.10E-01	3.40E-01	-6.23E-02	2.00E-01
3.20E-01	3.40E-01	-5.89E-02	2.01E-01
3.30E-01	3.40E-01	-5.55E-02	2.01E-01
3.40E-01	3.40E-01	-5.21E-02	2.02E-01
3.50E-01	3.40E-01	-4.87E-02	2.02E-01
3.60E-01	3.40E-01	-4.52E-02	2.03E-01
3.70E-01	3.40E-01	-4.17E-02	2.03E-01
3.80E-01	3.40E-01	-3.82E-02	2.04E-01
3.90E-01	3.40E-01	-3.46E-02	2.05E-01
4.00E-01	3.40E-01	-3.10E-02	2.05E-01
4.10E-01	3.40E-01	-2.73E-02	2.06E-01
4.20E-01	3.40E-01	-2.36E-02	2.06E-01
4.30E-01	3.40E-01	-1.99E-02	2.07E-01
4.40E-01	3.40E-01	-1.61E-02	2.08E-01
4.50E-01	3.40E-01	-1.23E-02	2.08E-01
4.60E-01	3.40E-01	-8.49E-03	2.09E-01
4.70E-01	3.40E-01	-4.59E-03	2.10E-01
4.80E-01	3.40E-01	-6.57E-04	2.11E-01
4.90E-01	3.40E-01	3.32E-03	2.11E-01
5.00E-01	3.40E-01	7.35E-03	2.12E-01
5.10E-01	3.40E-01	1.14E-02	2.13E-01
5.20E-01	3.40E-01	1.55E-02	2.14E-01
5.30E-01	3.40E-01	1.97E-02	2.15E-01
5.40E-01	3.40E-01	2.39E-02	2.15E-01
5.50E-01	3.40E-01	2.82E-02	2.16E-01
5.60E-01	3.40E-01	3.25E-02	2.17E-01
5.70E-01	3.40E-01	3.69E-02	2.18E-01
5.80E-01	3.40E-01	4.13E-02	2.19E-01
5.90E-01	3.40E-01	4.58E-02	2.20E-01
6.00E-01	3.40E-01	5.03E-02	2.21E-01
6.10E-01	3.40E-01	5.49E-02	2.22E-01
6.20E-01	3.40E-01	5.96E-02	2.23E-01
6.30E-01	3.40E-01	6.43E-02	2.24E-01
6.40E-01	3.40E-01	6.91E-02	2.26E-01
6.50E-01	3.40E-01	7.40E-02	2.27E-01
6.60E-01	3.40E-01	7.89E-02	2.28E-01
6.70E-01	3.40E-01	8.39E-02	2.29E-01
6.80E-01	3.40E-01	8.90E-02	2.31E-01
6.90E-01	3.40E-01	9.41E-02	2.32E-01
7.00E-01	3.40E-01	9.94E-02	2.33E-01
7.10E-01	3.40E-01	1.05E-01	2.35E-01
7.20E-01	3.40E-01	1.10E-01	2.36E-01
7.30E-01	3.40E-01	1.16E-01	2.38E-01
7.40E-01	3.40E-01	1.21E-01	2.39E-01
7.50E-01	3.40E-01	1.27E-01	2.41E-01
7.60E-01	3.40E-01	1.33E-01	2.43E-01
7.70E-01	3.40E-01	1.39E-01	2.44E-01
7.80E-01	3.40E-01	1.45E-01	2.46E-01
7.90E-01	3.40E-01	1.51E-01	2.48E-01
8.00E-01	3.40E-01	1.57E-01	2.50E-01
8.10E-01	3.40E-01	1.63E-01	2.52E-01
8.20E-01	3.40E-01	1.70E-01	2.55E-01
8.30E-01	3.40E-01	1.76E-01	2.57E-01
8.40E-01	3.40E-01	1.83E-01	2.59E-01
8.50E-01	3.40E-01	1.90E-01	2.62E-01
8.60E-01	3.40E-01	1.97E-01	2.65E-01
8.70E-01	3.40E-01	2.05E-01	2.68E-01
8.80E-01	3.40E-01	2.12E-01	2.71E-01
8.90E-01	3.40E-01	2.20E-01	2.74E-01
9.00E-01	3.40E-01	2.28E-01	2.77E-01
9.10E-01	3.40E-01	2.37E-01	2.81E-01
9.20E-01	3.40E-01	2.45E-01	2.85E-01
9.30E-01	3.40E-01	2.54E-01	2.89E-01
9.40E-01	3.40E-01	2.64E-01	2.94E-01
9.50E-01	3.40E-01	2.74E-01	2.99E-01
9.60E-01	3.40E-01	2.84E-01	3.04E-01
9.70E-01	3.40E-01	2.95E-01	3.11E-01
9.80E-01	3.40E-01	3.08E-01	3.18E-01
9.90E-01	3.40E-01	3.22E-01	3.27E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	3.50E-01	-1.56E-01	1.94E-01
1.00E-02	3.50E-01	-1.54E-01	1.94E-01
2.00E-02	3.50E-01	-1.51E-01	1.94E-01
3.00E-02	3.50E-01	-1.48E-01	1.95E-01
4.00E-02	3.50E-01	-1.46E-01	1.95E-01
5.00E-02	3.50E-01	-1.43E-01	1.95E-01
6.00E-02	3.50E-01	-1.40E-01	1.96E-01
7.00E-02	3.50E-01	-1.37E-01	1.96E-01
8.00E-02	3.50E-01	-1.35E-01	1.97E-01
9.00E-02	3.50E-01	-1.32E-01	1.97E-01
1.00E-01	3.50E-01	-1.29E-01	1.97E-01
1.10E-01	3.50E-01	-1.26E-01	1.98E-01
1.20E-01	3.50E-01	-1.23E-01	1.98E-0

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	3.60E-01	-1.60E-01	2.00E-01
1.00E-02	3.60E-01	-1.57E-01	2.00E-01
2.00E-02	3.60E-01	-1.55E-01	2.01E-01
3.00E-02	3.60E-01	-1.52E-01	2.01E-01
4.00E-02	3.60E-01	-1.49E-01	2.01E-01
5.00E-02	3.60E-01	-1.46E-01	2.02E-01
6.00E-02	3.60E-01	-1.44E-01	2.02E-01
7.00E-02	3.60E-01	-1.41E-01	2.03E-01
8.00E-02	3.60E-01	-1.38E-01	2.03E-01
9.00E-02	3.60E-01	-1.35E-01	2.03E-01
1.00E-01	3.60E-01	-1.32E-01	2.04E-01
1.10E-01	3.60E-01	-1.29E-01	2.04E-01
1.20E-01	3.60E-01	-1.27E-01	2.05E-01
1.30E-01	3.60E-01	-1.24E-01	2.05E-01
1.40E-01	3.60E-01	-1.21E-01	2.05E-01
1.50E-01	3.60E-01	-1.18E-01	2.06E-01
1.60E-01	3.60E-01	-1.15E-01	2.06E-01
1.70E-01	3.60E-01	-1.12E-01	2.07E-01
1.80E-01	3.60E-01	-1.09E-01	2.07E-01
1.90E-01	3.60E-01	-1.05E-01	2.08E-01
2.00E-01	3.60E-01	-1.02E-01	2.08E-01
2.10E-01	3.60E-01	-9.91E-02	2.09E-01
2.20E-01	3.60E-01	-9.59E-02	2.09E-01
2.30E-01	3.60E-01	-9.27E-02	2.10E-01
2.40E-01	3.60E-01	-8.94E-02	2.10E-01
2.50E-01	3.60E-01	-8.61E-02	2.11E-01
2.60E-01	3.60E-01	-8.28E-02	2.11E-01
2.70E-01	3.60E-01	-7.95E-02	2.12E-01
2.80E-01	3.60E-01	-7.61E-02	2.12E-01
2.90E-01	3.60E-01	-7.27E-02	2.13E-01
3.00E-01	3.60E-01	-6.92E-02	2.13E-01
3.10E-01	3.60E-01	-6.58E-02	2.14E-01
3.20E-01	3.60E-01	-6.22E-02	2.14E-01
3.30E-01	3.60E-01	-5.87E-02	2.15E-01
3.40E-01	3.60E-01	-5.51E-02	2.16E-01
3.50E-01	3.60E-01	-5.15E-02	2.16E-01
3.60E-01	3.60E-01	-4.78E-02	2.17E-01
3.70E-01	3.60E-01	-4.41E-02	2.18E-01
3.80E-01	3.60E-01	-4.04E-02	2.18E-01
3.90E-01	3.60E-01	-3.66E-02	2.19E-01
4.00E-01	3.60E-01	-3.28E-02	2.20E-01
4.10E-01	3.60E-01	-2.89E-02	2.20E-01
4.20E-01	3.60E-01	-2.50E-02	2.21E-01
4.30E-01	3.60E-01	-2.11E-02	2.22E-01
4.40E-01	3.60E-01	-1.71E-02	2.22E-01
4.50E-01	3.60E-01	-1.31E-02	2.23E-01
4.60E-01	3.60E-01	-9.01E-03	2.24E-01
4.70E-01	3.60E-01	-4.88E-03	2.25E-01
4.80E-01	3.60E-01	-7.15E-04	2.26E-01
4.90E-01	3.60E-01	3.50E-03	2.26E-01
5.00E-01	3.60E-01	7.77E-03	2.27E-01
5.10E-01	3.60E-01	1.21E-02	2.28E-01
5.20E-01	3.60E-01	1.65E-02	2.29E-01
5.30E-01	3.60E-01	2.09E-02	2.30E-01
5.40E-01	3.60E-01	2.54E-02	2.31E-01
5.50E-01	3.60E-01	2.99E-02	2.32E-01
5.60E-01	3.60E-01	3.45E-02	2.33E-01
5.70E-01	3.60E-01	3.91E-02	2.34E-01
5.80E-01	3.60E-01	4.39E-02	2.35E-01
5.90E-01	3.60E-01	4.86E-02	2.36E-01
6.00E-01	3.60E-01	5.35E-02	2.37E-01
6.10E-01	3.60E-01	5.84E-02	2.38E-01
6.20E-01	3.60E-01	6.33E-02	2.39E-01
6.30E-01	3.60E-01	6.84E-02	2.41E-01
6.40E-01	3.60E-01	7.35E-02	2.42E-01
6.50E-01	3.60E-01	7.87E-02	2.43E-01
6.60E-01	3.60E-01	8.39E-02	2.44E-01
6.70E-01	3.60E-01	8.93E-02	2.46E-01
6.80E-01	3.60E-01	9.47E-02	2.47E-01
6.90E-01	3.60E-01	1.00E-01	2.49E-01
7.00E-01	3.60E-01	1.06E-01	2.50E-01
7.10E-01	3.60E-01	1.11E-01	2.52E-01
7.20E-01	3.60E-01	1.17E-01	2.53E-01
7.30E-01	3.60E-01	1.23E-01	2.55E-01
7.40E-01	3.60E-01	1.29E-01	2.57E-01
7.50E-01	3.60E-01	1.35E-01	2.58E-01
7.60E-01	3.60E-01	1.41E-01	2.60E-01
7.70E-01	3.60E-01	1.48E-01	2.62E-01
7.80E-01	3.60E-01	1.54E-01	2.64E-01
7.90E-01	3.60E-01	1.61E-01	2.66E-01
8.00E-01	3.60E-01	1.67E-01	2.68E-01
8.10E-01	3.60E-01	1.74E-01	2.71E-01
8.20E-01	3.60E-01	1.81E-01	2.73E-01
8.30E-01	3.60E-01	1.88E-01	2.75E-01
8.40E-01	3.60E-01	1.95E-01	2.78E-01
8.50E-01	3.60E-01	2.03E-01	2.81E-01
8.60E-01	3.60E-01	2.10E-01	2.83E-01
8.70E-01	3.60E-01	2.18E-01	2.86E-01
8.80E-01	3.60E-01	2.26E-01	2.90E-01
8.90E-01	3.60E-01	2.35E-01	2.93E-01
9.00E-01	3.60E-01	2.43E-01	2.97E-01
9.10E-01	3.60E-01	2.52E-01	3.00E-01
9.20E-01	3.60E-01	2.61E-01	3.04E-01
9.30E-01	3.60E-01	2.71E-01	3.09E-01
9.40E-01	3.60E-01	2.81E-01	3.13E-01
9.50E-01	3.60E-01	2.91E-01	3.19E-01
9.60E-01	3.60E-01	3.02E-01	3.24E-01
9.70E-01	3.60E-01	3.14E-01	3.31E-01
9.80E-01	3.60E-01	3.27E-01	3.38E-01
9.90E-01	3.60E-01	3.41E-01	3.47E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	3.70E-01	-1.64E-01	2.06E-01
1.00E-02	3.70E-01	-1.61E-01	2.07E-01
2.00E-02	3.70E-01	-1.58E-01	2.07E-01
3.00E-02	3.70E-01	-1.56E-01	2.07E-01
4.00E-02	3.70E-01	-1.53E-01	2.08E-01
5.00E-02	3.70E-01	-1.50E-01	2.08E-01
6.00E-02	3.70E-01	-1.47E-01	2.09E-01
7.00E-02	3.70E-01	-1.44E-01	2.09E-01
8.00E-02	3.70E-01	-1.41E-01	2.09E-01
9.00E-02	3.70E-01	-1.39E-01	2.10E-01
1.00E-01	3.70E-01	-1.36E-01	2.10E-01
1.10E-01	3.70E-01	-1.33E-01	2.11E-01
1.20E-01	3.70E-01	-1.30E-01	2.11E-01
1.30E-01	3.70E-01	-1.27E-01	2.12E-01
1.40E-01	3.70E-01	-1.24E-01	2.12E-01
1.50E-01	3.70E-01	-1.21E-01	2.12E-01
1.60E-01	3.70E-01	-1.17E-01	2.13E-01
1.70E-01	3.70E-01	-1.14E-01	2.13E-01
1.80E-01	3.70E-01	-1.11E-01	2.14E-01
1.90E-01	3.70E-01	-1.08E-01	2.14E-01
2.00E-01	3.70E-01	-1.05E-01	2.15E-01
2.10E-01	3.70E-01	-1.02E-01	2.15E-01
2.20E-01	3.70E-01	-9.83E-02	2.16E-01
2.30E-01	3.70E-01	-9.50E-02	2.16E-01
2.40E-01	3.70E-01	-9.17E-02	2.17E-01
2.50E-01	3.70E-01	-8.84E-02	2.17E-01
2.60E-01	3.70E-01	-8.50E-02	2.18E-01
2.70E-01	3.70E-01	-8.15E-02	2.19E-01
2.80E-01	3.70E-01	-7.81E-02	2.19E-01
2.90E-01	3.70E-01	-7.46E-02	2.20E-01
3.00E-01	3.70E-01	-7.11E-02	2.20E-01
3.10E-01	3.70E-01	-6.75E-02	2.21E-01
3.20E-01	3.70E-01	-6.39E-02	2.21E-01
3.30E-01	3.70E-01	-6.03E-02	2.22E-01
3.40E-01	3.70E-01	-5.66E-02	2.23E-01
3.50E-01	3.70E-01	-5.29E-02	2.23E-01
3.60E-01	3.70E-01	-4.91E-02	2.24E-01
3.70E-01	3.70E-01	-4.53E-02	2.25E-01
3.80E-01	3.70E-01	-4.15E-02	2.25E-01
3.90E-01	3.70E-01	-3.76E-02	2.26E-01
4.00E-01	3.70E-01	-3.37E-02	2.27E-01
4.10E-01	3.70E-01	-2.98E-02	2.28E-01
4.20E-01	3.70E-01	-2.58E-02	2.28E-01
4.30E-01	3.70E-01	-2.17E-02	2.29E-01
4.40E-01	3.70E-01	-1.76E-02	2.30E-01
4.50E-01	3.70E-01	-1.35E-02	2.31E-01
4.60E-01	3.70E-01	-9.28E-03	2.31E-01
4.70E-01	3.70E-01	-5.05E-03	2.32E-01
4.80E-01	3.70E-01	-7.61E-04	2.33E-01
4.90E-01	3.70E-01	3.58E-03	2.34E-01
5.00E-01	3.70E-01	7.96E-03	2.35E-01
5.10E-01	3.70E-01	1.24E-02	2.36E-01
5.20E-01	3.70E-01	1.69E-02	2.37E-01
5.30E-01	3.70E-01	2.15E-02	2.38E-01
5.40E-01	3.70E-01	2.61E-02	2.39E-01
5.50E-01	3.70E-01	3.07E-02	2.40E-01
5.60E-01	3.70E-01	3.55E-02	2.41E-01
5.70E-01	3.70E-01	4.02E-02	2.42E-01
5.80E-01	3.70E-01	4.51E-02	2.43E-01
5.90E-01	3.70E-01	5.00E-02	2.44E-01
6.00E-01	3.70E-01	5.50E-02	2.45E-01
6.10E-01	3.70E-01	6.00E-02	2.46E-01
6.20E-01	3.70E-01	6.52E-02	2.48E-01
6.30E-01	3.70E-01	7.04E-02	2.49E-01
6.40E-01	3.70E-01	7.56E-02	2.50E-01
6.50E-01	3.70E-01	8.10E-02	2.51E-01
6.60E-01	3.70E-01	8.64E-02	2.53E-01
6.70E-01	3.70E-01	9.19E-02	2.54E-01
6.80E-01	3.70E-01	9.75E-02	2.56E-01
6.90E-01	3.70E-01	1.03E-01	2.57E-01
7.00E-01	3.70E-01	1.09E-01	2.59E-01
7.10E-01	3.70E-01	1.15E-01	2.60E-01
7.20E-01	3.70E-01	1.21E-01	2.62E-01
7.30E-01	3.70E-01	1.27E-01	2.64E-01
7.40E-01	3.70E-01	1.33E-01	2.65E-01
7.50E-01	3.70E-01	1.39E-01	2.67E-01
7.60E-01	3.70E-01	1.46E-01	2.69E-01
7.70E-01	3.70E-01	1.52E-01	2.71E-01
7.80E-01	3.70E-01	1.59E-01	2.73E-01
7.90E-01	3.70E-01	1.65E-01	2.75E-01
8.00E-01	3.70E-01	1.72E-01	2.77E-01
8.10E-01	3.70E-01	1.79E-01	2.80E-01
8.20E-01	3.70E-01	1.87E-01	2.82E-01
8.30E-01	3.70E-01	1.94E-01	2.85E-01
8.40E-01	3.70E-01	2.01E-01	2.87E-01
8.50E-01	3.70E-01	2.09E-01	2.90E-01
8.60E-01	3.70E-01	2.17E-01	2.93E-01
8.70E-01	3.70E-01	2.25E-01	2.96E-01
8.80E-01	3.70E-01	2.33E-01	2.99E-01
8.90E-01	3.70E-01	2.42E-01	3.03E-01
9.00E-01	3.70E-01	2.51E-01	3.06E-01
9.10E-01	3.70E-01	2.60E-01	3.10E-01
9.20E-01	3.70E-01	2.69E-01	3.14E-01
9.30E-01	3.70E-01	2.79E-01	3.19E-01
9.40E-01	3.70E-01	2.89E-01	3.23E-01
9.50E-01	3.70E-01	3.00E-01	3.29E-01
9.60E-01	3.70E-01	3.11E-01	3.34E-01
9.70E-01	3.70E-01	3.23E-01	3.41E-01
9.80E-01	3.70E-01	3.37E-01	3.48E-01
9.90E-01	3.70E-01	3.51E-01	3.57E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	3.80E-01	-1.67E-01	2.13E-01
1.00E-02	3.80E-01	-1.65E-01	2.13E-01
2.00E-02	3.80E-01	-1.62E-01	2.13E-01
3.00E-02	3.80E-01	-1.59E-01	2.14E-01
4.00E-02	3.80E-01	-1.56E-01	2.14E-01
5.00E-02	3.80E-01	-1.53E-01	2.15E-01
6.00E-02	3.80E-01	-1.51E-01	2.15E-01
7.00E-02	3.80E-01	-1.48E-01	2.15E-01
8.00E-02	3.80E-01	-1.45E-01	2.16E-01
9.00E-02	3.80E-01	-1.42E-01	2.16E-01
1.00E-01	3.80E-01	-1.39E-01	2.17E-01
1.10E-01	3.80E-01	-1.36E-01	2.17E-01
1.20E-01	3.80E-01	-1.33E-01	2.18E

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	3.90E-01	-1.71E-01	2.19E-01
1.00E-02	3.90E-01	-1.68E-01	2.19E-01
2.00E-02	3.90E-01	-1.65E-01	2.20E-01
3.00E-02	3.90E-01	-1.63E-01	2.20E-01
4.00E-02	3.90E-01	-1.60E-01	2.21E-01
5.00E-02	3.90E-01	-1.57E-01	2.21E-01
6.00E-02	3.90E-01	-1.54E-01	2.22E-01
7.00E-02	3.90E-01	-1.51E-01	2.22E-01
8.00E-02	3.90E-01	-1.48E-01	2.22E-01
9.00E-02	3.90E-01	-1.45E-01	2.23E-01
1.00E-01	3.90E-01	-1.42E-01	2.23E-01
1.10E-01	3.90E-01	-1.39E-01	2.24E-01
1.20E-01	3.90E-01	-1.36E-01	2.24E-01
1.30E-01	3.90E-01	-1.33E-01	2.25E-01
1.40E-01	3.90E-01	-1.29E-01	2.25E-01
1.50E-01	3.90E-01	-1.26E-01	2.26E-01
1.60E-01	3.90E-01	-1.23E-01	2.26E-01
1.70E-01	3.90E-01	-1.20E-01	2.27E-01
1.80E-01	3.90E-01	-1.17E-01	2.27E-01
1.90E-01	3.90E-01	-1.13E-01	2.28E-01
2.00E-01	3.90E-01	-1.10E-01	2.28E-01
2.10E-01	3.90E-01	-1.07E-01	2.29E-01
2.20E-01	3.90E-01	-1.03E-01	2.30E-01
2.30E-01	3.90E-01	-9.97E-02	2.30E-01
2.40E-01	3.90E-01	-9.63E-02	2.31E-01
2.50E-01	3.90E-01	-9.28E-02	2.31E-01
2.60E-01	3.90E-01	-8.92E-02	2.32E-01
2.70E-01	3.90E-01	-8.56E-02	2.33E-01
2.80E-01	3.90E-01	-8.20E-02	2.33E-01
2.90E-01	3.90E-01	-7.84E-02	2.34E-01
3.00E-01	3.90E-01	-7.47E-02	2.34E-01
3.10E-01	3.90E-01	-7.10E-02	2.35E-01
3.20E-01	3.90E-01	-6.72E-02	2.36E-01
3.30E-01	3.90E-01	-6.34E-02	2.37E-01
3.40E-01	3.90E-01	-5.95E-02	2.37E-01
3.50E-01	3.90E-01	-5.57E-02	2.38E-01
3.60E-01	3.90E-01	-5.17E-02	2.39E-01
3.70E-01	3.90E-01	-4.77E-02	2.39E-01
3.80E-01	3.90E-01	-4.37E-02	2.40E-01
3.90E-01	3.90E-01	-3.97E-02	2.41E-01
4.00E-01	3.90E-01	-3.56E-02	2.42E-01
4.10E-01	3.90E-01	-3.14E-02	2.43E-01
4.20E-01	3.90E-01	-2.72E-02	2.43E-01
4.30E-01	3.90E-01	-2.29E-02	2.44E-01
4.40E-01	3.90E-01	-1.86E-02	2.45E-01
4.50E-01	3.90E-01	-1.43E-02	2.46E-01
4.60E-01	3.90E-01	-9.87E-03	2.47E-01
4.70E-01	3.90E-01	-5.41E-03	2.48E-01
4.80E-01	3.90E-01	-8.96E-04	2.49E-01
4.90E-01	3.90E-01	3.67E-03	2.50E-01
5.00E-01	3.90E-01	8.30E-03	2.51E-01
5.10E-01	3.90E-01	1.30E-02	2.52E-01
5.20E-01	3.90E-01	1.77E-02	2.53E-01
5.30E-01	3.90E-01	2.25E-02	2.54E-01
5.40E-01	3.90E-01	2.74E-02	2.55E-01
5.50E-01	3.90E-01	3.23E-02	2.56E-01
5.60E-01	3.90E-01	3.73E-02	2.57E-01
5.70E-01	3.90E-01	4.24E-02	2.58E-01
5.80E-01	3.90E-01	4.75E-02	2.59E-01
5.90E-01	3.90E-01	5.27E-02	2.60E-01
6.00E-01	3.90E-01	5.80E-02	2.62E-01
6.10E-01	3.90E-01	6.33E-02	2.63E-01
6.20E-01	3.90E-01	6.88E-02	2.64E-01
6.30E-01	3.90E-01	7.43E-02	2.66E-01
6.40E-01	3.90E-01	7.98E-02	2.67E-01
6.50E-01	3.90E-01	8.55E-02	2.68E-01
6.60E-01	3.90E-01	9.12E-02	2.70E-01
6.70E-01	3.90E-01	9.71E-02	2.71E-01
6.80E-01	3.90E-01	1.03E-01	2.73E-01
6.90E-01	3.90E-01	1.09E-01	2.74E-01
7.00E-01	3.90E-01	1.15E-01	2.76E-01
7.10E-01	3.90E-01	1.21E-01	2.78E-01
7.20E-01	3.90E-01	1.28E-01	2.80E-01
7.30E-01	3.90E-01	1.34E-01	2.81E-01
7.40E-01	3.90E-01	1.41E-01	2.83E-01
7.50E-01	3.90E-01	1.47E-01	2.85E-01
7.60E-01	3.90E-01	1.54E-01	2.87E-01
7.70E-01	3.90E-01	1.61E-01	2.89E-01
7.80E-01	3.90E-01	1.68E-01	2.91E-01
7.90E-01	3.90E-01	1.75E-01	2.94E-01
8.00E-01	3.90E-01	1.83E-01	2.96E-01
8.10E-01	3.90E-01	1.90E-01	2.98E-01
8.20E-01	3.90E-01	1.98E-01	3.01E-01
8.30E-01	3.90E-01	2.05E-01	3.03E-01
8.40E-01	3.90E-01	2.13E-01	3.06E-01
8.50E-01	3.90E-01	2.22E-01	3.09E-01
8.60E-01	3.90E-01	2.30E-01	3.12E-01
8.70E-01	3.90E-01	2.39E-01	3.15E-01
8.80E-01	3.90E-01	2.47E-01	3.19E-01
8.90E-01	3.90E-01	2.56E-01	3.22E-01
9.00E-01	3.90E-01	2.66E-01	3.26E-01
9.10E-01	3.90E-01	2.75E-01	3.30E-01
9.20E-01	3.90E-01	2.85E-01	3.34E-01
9.30E-01	3.90E-01	2.96E-01	3.38E-01
9.40E-01	3.90E-01	3.06E-01	3.43E-01
9.50E-01	3.90E-01	3.18E-01	3.49E-01
9.60E-01	3.90E-01	3.30E-01	3.54E-01
9.70E-01	3.90E-01	3.42E-01	3.61E-01
9.80E-01	3.90E-01	3.56E-01	3.68E-01
9.90E-01	3.90E-01	3.71E-01	3.77E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	4.00E-01	-1.75E-01	2.25E-01
1.00E-02	4.00E-01	-1.72E-01	2.26E-01
2.00E-02	4.00E-01	-1.69E-01	2.26E-01
3.00E-02	4.00E-01	-1.66E-01	2.27E-01
4.00E-02	4.00E-01	-1.63E-01	2.27E-01
5.00E-02	4.00E-01	-1.60E-01	2.28E-01
6.00E-02	4.00E-01	-1.57E-01	2.28E-01
7.00E-02	4.00E-01	-1.54E-01	2.29E-01
8.00E-02	4.00E-01	-1.51E-01	2.29E-01
9.00E-02	4.00E-01	-1.48E-01	2.30E-01
1.00E-01	4.00E-01	-1.45E-01	2.30E-01
1.10E-01	4.00E-01	-1.42E-01	2.31E-01
1.20E-01	4.00E-01	-1.39E-01	2.31E-01
1.30E-01	4.00E-01	-1.36E-01	2.32E-01
1.40E-01	4.00E-01	-1.32E-01	2.32E-01
1.50E-01	4.00E-01	-1.29E-01	2.33E-01
1.60E-01	4.00E-01	-1.26E-01	2.33E-01
1.70E-01	4.00E-01	-1.23E-01	2.34E-01
1.80E-01	4.00E-01	-1.19E-01	2.34E-01
1.90E-01	4.00E-01	-1.16E-01	2.35E-01
2.00E-01	4.00E-01	-1.12E-01	2.35E-01
2.10E-01	4.00E-01	-1.09E-01	2.36E-01
2.20E-01	4.00E-01	-1.06E-01	2.37E-01
2.30E-01	4.00E-01	-1.02E-01	2.37E-01
2.40E-01	4.00E-01	-9.85E-02	2.38E-01
2.50E-01	4.00E-01	-9.49E-02	2.38E-01
2.60E-01	4.00E-01	-9.13E-02	2.39E-01
2.70E-01	4.00E-01	-8.77E-02	2.40E-01
2.80E-01	4.00E-01	-8.40E-02	2.40E-01
2.90E-01	4.00E-01	-8.03E-02	2.41E-01
3.00E-01	4.00E-01	-7.65E-02	2.42E-01
3.10E-01	4.00E-01	-7.27E-02	2.42E-01
3.20E-01	4.00E-01	-6.88E-02	2.43E-01
3.30E-01	4.00E-01	-6.50E-02	2.44E-01
3.40E-01	4.00E-01	-6.10E-02	2.45E-01
3.50E-01	4.00E-01	-5.70E-02	2.45E-01
3.60E-01	4.00E-01	-5.30E-02	2.46E-01
3.70E-01	4.00E-01	-4.90E-02	2.47E-01
3.80E-01	4.00E-01	-4.48E-02	2.48E-01
3.90E-01	4.00E-01	-4.07E-02	2.48E-01
4.00E-01	4.00E-01	-3.65E-02	2.49E-01
4.10E-01	4.00E-01	-3.22E-02	2.50E-01
4.20E-01	4.00E-01	-2.79E-02	2.51E-01
4.30E-01	4.00E-01	-2.36E-02	2.52E-01
4.40E-01	4.00E-01	-1.92E-02	2.53E-01
4.50E-01	4.00E-01	-1.47E-02	2.54E-01
4.60E-01	4.00E-01	-1.02E-02	2.55E-01
4.70E-01	4.00E-01	-5.61E-03	2.55E-01
4.80E-01	4.00E-01	-9.85E-04	2.56E-01
4.90E-01	4.00E-01	3.70E-03	2.57E-01
5.00E-01	4.00E-01	8.44E-03	2.58E-01
5.10E-01	4.00E-01	1.32E-02	2.59E-01
5.20E-01	4.00E-01	1.81E-02	2.61E-01
5.30E-01	4.00E-01	2.30E-02	2.62E-01
5.40E-01	4.00E-01	2.80E-02	2.63E-01
5.50E-01	4.00E-01	3.31E-02	2.64E-01
5.60E-01	4.00E-01	3.82E-02	2.65E-01
5.70E-01	4.00E-01	4.34E-02	2.66E-01
5.80E-01	4.00E-01	4.87E-02	2.67E-01
5.90E-01	4.00E-01	5.40E-02	2.69E-01
6.00E-01	4.00E-01	5.94E-02	2.70E-01
6.10E-01	4.00E-01	6.49E-02	2.71E-01
6.20E-01	4.00E-01	7.05E-02	2.73E-01
6.30E-01	4.00E-01	7.62E-02	2.74E-01
6.40E-01	4.00E-01	8.19E-02	2.75E-01
6.50E-01	4.00E-01	8.77E-02	2.77E-01
6.60E-01	4.00E-01	9.36E-02	2.78E-01
6.70E-01	4.00E-01	9.96E-02	2.80E-01
6.80E-01	4.00E-01	1.06E-01	2.82E-01
6.90E-01	4.00E-01	1.12E-01	2.83E-01
7.00E-01	4.00E-01	1.18E-01	2.85E-01
7.10E-01	4.00E-01	1.25E-01	2.87E-01
7.20E-01	4.00E-01	1.31E-01	2.88E-01
7.30E-01	4.00E-01	1.38E-01	2.90E-01
7.40E-01	4.00E-01	1.44E-01	2.92E-01
7.50E-01	4.00E-01	1.51E-01	2.94E-01
7.60E-01	4.00E-01	1.58E-01	2.96E-01
7.70E-01	4.00E-01	1.65E-01	2.98E-01
7.80E-01	4.00E-01	1.73E-01	3.01E-01
7.90E-01	4.00E-01	1.80E-01	3.03E-01
8.00E-01	4.00E-01	1.88E-01	3.05E-01
8.10E-01	4.00E-01	1.95E-01	3.08E-01
8.20E-01	4.00E-01	2.03E-01	3.10E-01
8.30E-01	4.00E-01	2.11E-01	3.13E-01
8.40E-01	4.00E-01	2.19E-01	3.16E-01
8.50E-01	4.00E-01	2.28E-01	3.19E-01
8.60E-01	4.00E-01	2.36E-01	3.22E-01
8.70E-01	4.00E-01	2.45E-01	3.25E-01
8.80E-01	4.00E-01	2.54E-01	3.28E-01
8.90E-01	4.00E-01	2.64E-01	3.32E-01
9.00E-01	4.00E-01	2.73E-01	3.36E-01
9.10E-01	4.00E-01	2.83E-01	3.40E-01
9.20E-01	4.00E-01	2.93E-01	3.44E-01
9.30E-01	4.00E-01	3.04E-01	3.48E-01
9.40E-01	4.00E-01	3.15E-01	3.53E-01
9.50E-01	4.00E-01	3.26E-01	3.59E-01
9.60E-01	4.00E-01	3.39E-01	3.65E-01
9.70E-01	4.00E-01	3.51E-01	3.71E-01
9.80E-01	4.00E-01	3.65E-01	3.78E-01
9.90E-01	4.00E-01	3.81E-01	3.87E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	4.10E-01	-1.78E-01	2.32E-01
1.00E-02	4.10E-01	-1.75E-01	2.32E-01
2.00E-02	4.10E-01	-1.72E-01	2.33E-01
3.00E-02	4.10E-01	-1.69E-01	2.33E-01
4.00E-02	4.10E-01	-1.66E-01	2.34E-01
5.00E-02	4.10E-01	-1.63E-01	2.34E-01
6.00E-02	4.10E-01	-1.60E-01	2.35E-01
7.00E-02	4.10E-01	-1.57E-01	2.35E-01
8.00E-02	4.10E-01	-1.54E-01	2.36E-01
9.00E-02	4.10E-01	-1.51E-01	2.36E-01
1.00E-01	4.10E-01	-1.48E-01	2.37E-01
1.10E-01	4.10E-01	-1.45E-01	2.37E-01
1.20E-01	4.10E-01	-1.42E-01	2.38

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	4.20E-01	-1.82E-01	2.38E-01
1.00E-02	4.20E-01	-1.79E-01	2.39E-01
2.00E-02	4.20E-01	-1.76E-01	2.39E-01
3.00E-02	4.20E-01	-1.73E-01	2.40E-01
4.00E-02	4.20E-01	-1.70E-01	2.40E-01
5.00E-02	4.20E-01	-1.67E-01	2.41E-01
6.00E-02	4.20E-01	-1.64E-01	2.41E-01
7.00E-02	4.20E-01	-1.61E-01	2.42E-01
8.00E-02	4.20E-01	-1.57E-01	2.42E-01
9.00E-02	4.20E-01	-1.54E-01	2.43E-01
1.00E-01	4.20E-01	-1.51E-01	2.44E-01
1.10E-01	4.20E-01	-1.48E-01	2.44E-01
1.20E-01	4.20E-01	-1.45E-01	2.45E-01
1.30E-01	4.20E-01	-1.41E-01	2.45E-01
1.40E-01	4.20E-01	-1.38E-01	2.46E-01
1.50E-01	4.20E-01	-1.35E-01	2.46E-01
1.60E-01	4.20E-01	-1.31E-01	2.47E-01
1.70E-01	4.20E-01	-1.28E-01	2.48E-01
1.80E-01	4.20E-01	-1.24E-01	2.48E-01
1.90E-01	4.20E-01	-1.21E-01	2.49E-01
2.00E-01	4.20E-01	-1.17E-01	2.49E-01
2.10E-01	4.20E-01	-1.14E-01	2.50E-01
2.20E-01	4.20E-01	-1.10E-01	2.51E-01
2.30E-01	4.20E-01	-1.07E-01	2.51E-01
2.40E-01	4.20E-01	-1.03E-01	2.52E-01
2.50E-01	4.20E-01	-9.92E-02	2.53E-01
2.60E-01	4.20E-01	-9.55E-02	2.53E-01
2.70E-01	4.20E-01	-9.17E-02	2.54E-01
2.80E-01	4.20E-01	-8.79E-02	2.55E-01
2.90E-01	4.20E-01	-8.40E-02	2.56E-01
3.00E-01	4.20E-01	-8.01E-02	2.56E-01
3.10E-01	4.20E-01	-7.61E-02	2.57E-01
3.20E-01	4.20E-01	-7.21E-02	2.58E-01
3.30E-01	4.20E-01	-6.80E-02	2.59E-01
3.40E-01	4.20E-01	-6.40E-02	2.59E-01
3.50E-01	4.20E-01	-5.98E-02	2.60E-01
3.60E-01	4.20E-01	-5.56E-02	2.61E-01
3.70E-01	4.20E-01	-5.14E-02	2.62E-01
3.80E-01	4.20E-01	-4.71E-02	2.63E-01
3.90E-01	4.20E-01	-4.27E-02	2.64E-01
4.00E-01	4.20E-01	-3.84E-02	2.65E-01
4.10E-01	4.20E-01	-3.39E-02	2.65E-01
4.20E-01	4.20E-01	-2.94E-02	2.66E-01
4.30E-01	4.20E-01	-2.49E-02	2.67E-01
4.40E-01	4.20E-01	-2.02E-02	2.68E-01
4.50E-01	4.20E-01	-1.56E-02	2.69E-01
4.60E-01	4.20E-01	-1.08E-02	2.70E-01
4.70E-01	4.20E-01	-6.06E-03	2.71E-01
4.80E-01	4.20E-01	-1.21E-03	2.72E-01
4.90E-01	4.20E-01	3.69E-03	2.73E-01
5.00E-01	4.20E-01	8.67E-03	2.74E-01
5.10E-01	4.20E-01	1.37E-02	2.76E-01
5.20E-01	4.20E-01	1.88E-02	2.77E-01
5.30E-01	4.20E-01	2.40E-02	2.78E-01
5.40E-01	4.20E-01	2.92E-02	2.79E-01
5.50E-01	4.20E-01	3.45E-02	2.80E-01
5.60E-01	4.20E-01	3.99E-02	2.82E-01
5.70E-01	4.20E-01	4.54E-02	2.83E-01
5.80E-01	4.20E-01	5.09E-02	2.84E-01
5.90E-01	4.20E-01	5.66E-02	2.85E-01
6.00E-01	4.20E-01	6.23E-02	2.87E-01
6.10E-01	4.20E-01	6.80E-02	2.88E-01
6.20E-01	4.20E-01	7.39E-02	2.90E-01
6.30E-01	4.20E-01	7.99E-02	2.91E-01
6.40E-01	4.20E-01	8.59E-02	2.93E-01
6.50E-01	4.20E-01	9.20E-02	2.94E-01
6.60E-01	4.20E-01	9.83E-02	2.96E-01
6.70E-01	4.20E-01	1.05E-01	2.97E-01
6.80E-01	4.20E-01	1.11E-01	2.99E-01
6.90E-01	4.20E-01	1.18E-01	3.01E-01
7.00E-01	4.20E-01	1.24E-01	3.03E-01
7.10E-01	4.20E-01	1.31E-01	3.05E-01
7.20E-01	4.20E-01	1.38E-01	3.06E-01
7.30E-01	4.20E-01	1.45E-01	3.08E-01
7.40E-01	4.20E-01	1.52E-01	3.10E-01
7.50E-01	4.20E-01	1.59E-01	3.13E-01
7.60E-01	4.20E-01	1.67E-01	3.15E-01
7.70E-01	4.20E-01	1.74E-01	3.17E-01
7.80E-01	4.20E-01	1.82E-01	3.19E-01
7.90E-01	4.20E-01	1.90E-01	3.22E-01
8.00E-01	4.20E-01	1.98E-01	3.24E-01
8.10E-01	4.20E-01	2.06E-01	3.27E-01
8.20E-01	4.20E-01	2.14E-01	3.29E-01
8.30E-01	4.20E-01	2.22E-01	3.32E-01
8.40E-01	4.20E-01	2.31E-01	3.35E-01
8.50E-01	4.20E-01	2.40E-01	3.38E-01
8.60E-01	4.20E-01	2.49E-01	3.41E-01
8.70E-01	4.20E-01	2.58E-01	3.45E-01
8.80E-01	4.20E-01	2.68E-01	3.48E-01
8.90E-01	4.20E-01	2.78E-01	3.52E-01
9.00E-01	4.20E-01	2.88E-01	3.55E-01
9.10E-01	4.20E-01	2.98E-01	3.60E-01
9.20E-01	4.20E-01	3.09E-01	3.64E-01
9.30E-01	4.20E-01	3.20E-01	3.69E-01
9.40E-01	4.20E-01	3.32E-01	3.74E-01
9.50E-01	4.20E-01	3.44E-01	3.79E-01
9.60E-01	4.20E-01	3.57E-01	3.85E-01
9.70E-01	4.20E-01	3.70E-01	3.91E-01
9.80E-01	4.20E-01	3.84E-01	3.99E-01
9.90E-01	4.20E-01	4.00E-01	4.07E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	4.30E-01	-1.85E-01	2.45E-01
1.00E-02	4.30E-01	-1.82E-01	2.46E-01
2.00E-02	4.30E-01	-1.79E-01	2.46E-01
3.00E-02	4.30E-01	-1.76E-01	2.47E-01
4.00E-02	4.30E-01	-1.73E-01	2.47E-01
5.00E-02	4.30E-01	-1.70E-01	2.48E-01
6.00E-02	4.30E-01	-1.67E-01	2.48E-01
7.00E-02	4.30E-01	-1.64E-01	2.49E-01
8.00E-02	4.30E-01	-1.60E-01	2.49E-01
9.00E-02	4.30E-01	-1.57E-01	2.50E-01
1.00E-01	4.30E-01	-1.54E-01	2.50E-01
1.10E-01	4.30E-01	-1.51E-01	2.51E-01
1.20E-01	4.30E-01	-1.47E-01	2.52E-01
1.30E-01	4.30E-01	-1.44E-01	2.52E-01
1.40E-01	4.30E-01	-1.41E-01	2.53E-01
1.50E-01	4.30E-01	-1.37E-01	2.53E-01
1.60E-01	4.30E-01	-1.34E-01	2.54E-01
1.70E-01	4.30E-01	-1.30E-01	2.55E-01
1.80E-01	4.30E-01	-1.27E-01	2.55E-01
1.90E-01	4.30E-01	-1.23E-01	2.56E-01
2.00E-01	4.30E-01	-1.20E-01	2.57E-01
2.10E-01	4.30E-01	-1.16E-01	2.57E-01
2.20E-01	4.30E-01	-1.13E-01	2.58E-01
2.30E-01	4.30E-01	-1.09E-01	2.59E-01
2.40E-01	4.30E-01	-1.05E-01	2.59E-01
2.50E-01	4.30E-01	-1.01E-01	2.60E-01
2.60E-01	4.30E-01	-9.75E-02	2.61E-01
2.70E-01	4.30E-01	-9.37E-02	2.61E-01
2.80E-01	4.30E-01	-8.98E-02	2.62E-01
2.90E-01	4.30E-01	-8.58E-02	2.63E-01
3.00E-01	4.30E-01	-8.18E-02	2.64E-01
3.10E-01	4.30E-01	-7.78E-02	2.65E-01
3.20E-01	4.30E-01	-7.37E-02	2.65E-01
3.30E-01	4.30E-01	-6.96E-02	2.66E-01
3.40E-01	4.30E-01	-6.54E-02	2.67E-01
3.50E-01	4.30E-01	-6.12E-02	2.68E-01
3.60E-01	4.30E-01	-5.69E-02	2.69E-01
3.70E-01	4.30E-01	-5.26E-02	2.70E-01
3.80E-01	4.30E-01	-4.82E-02	2.70E-01
3.90E-01	4.30E-01	-4.38E-02	2.71E-01
4.00E-01	4.30E-01	-3.93E-02	2.72E-01
4.10E-01	4.30E-01	-3.48E-02	2.73E-01
4.20E-01	4.30E-01	-3.02E-02	2.74E-01
4.30E-01	4.30E-01	-2.55E-02	2.75E-01
4.40E-01	4.30E-01	-2.08E-02	2.76E-01
4.50E-01	4.30E-01	-1.60E-02	2.77E-01
4.60E-01	4.30E-01	-1.12E-02	2.78E-01
4.70E-01	4.30E-01	-6.31E-03	2.79E-01
4.80E-01	4.30E-01	-1.36E-03	2.80E-01
4.90E-01	4.30E-01	3.66E-03	2.82E-01
5.00E-01	4.30E-01	8.75E-03	2.83E-01
5.10E-01	4.30E-01	1.39E-02	2.84E-01
5.20E-01	4.30E-01	1.91E-02	2.85E-01
5.30E-01	4.30E-01	2.44E-02	2.86E-01
5.40E-01	4.30E-01	2.98E-02	2.87E-01
5.50E-01	4.30E-01	3.52E-02	2.89E-01
5.60E-01	4.30E-01	4.07E-02	2.90E-01
5.70E-01	4.30E-01	4.63E-02	2.91E-01
5.80E-01	4.30E-01	5.20E-02	2.93E-01
5.90E-01	4.30E-01	5.78E-02	2.94E-01
6.00E-01	4.30E-01	6.36E-02	2.95E-01
6.10E-01	4.30E-01	6.95E-02	2.97E-01
6.20E-01	4.30E-01	7.56E-02	2.98E-01
6.30E-01	4.30E-01	8.17E-02	3.00E-01
6.40E-01	4.30E-01	8.79E-02	3.01E-01
6.50E-01	4.30E-01	9.42E-02	3.03E-01
6.60E-01	4.30E-01	1.01E-01	3.05E-01
6.70E-01	4.30E-01	1.07E-01	3.06E-01
6.80E-01	4.30E-01	1.14E-01	3.08E-01
6.90E-01	4.30E-01	1.20E-01	3.10E-01
7.00E-01	4.30E-01	1.27E-01	3.12E-01
7.10E-01	4.30E-01	1.34E-01	3.14E-01
7.20E-01	4.30E-01	1.41E-01	3.16E-01
7.30E-01	4.30E-01	1.48E-01	3.18E-01
7.40E-01	4.30E-01	1.56E-01	3.20E-01
7.50E-01	4.30E-01	1.63E-01	3.22E-01
7.60E-01	4.30E-01	1.71E-01	3.24E-01
7.70E-01	4.30E-01	1.78E-01	3.26E-01
7.80E-01	4.30E-01	1.86E-01	3.29E-01
7.90E-01	4.30E-01	1.94E-01	3.31E-01
8.00E-01	4.30E-01	2.02E-01	3.34E-01
8.10E-01	4.30E-01	2.11E-01	3.36E-01
8.20E-01	4.30E-01	2.19E-01	3.39E-01
8.30E-01	4.30E-01	2.28E-01	3.42E-01
8.40E-01	4.30E-01	2.37E-01	3.45E-01
8.50E-01	4.30E-01	2.46E-01	3.48E-01
8.60E-01	4.30E-01	2.55E-01	3.51E-01
8.70E-01	4.30E-01	2.65E-01	3.54E-01
8.80E-01	4.30E-01	2.75E-01	3.58E-01
8.90E-01	4.30E-01	2.85E-01	3.62E-01
9.00E-01	4.30E-01	2.95E-01	3.65E-01
9.10E-01	4.30E-01	3.06E-01	3.70E-01
9.20E-01	4.30E-01	3.17E-01	3.74E-01
9.30E-01	4.30E-01	3.28E-01	3.79E-01
9.40E-01	4.30E-01	3.40E-01	3.84E-01
9.50E-01	4.30E-01	3.53E-01	3.89E-01
9.60E-01	4.30E-01	3.66E-01	3.95E-01
9.70E-01	4.30E-01	3.79E-01	4.01E-01
9.80E-01	4.30E-01	3.94E-01	4.09E-01
9.90E-01	4.30E-01	4.10E-01	4.18E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	4.40E-01	-1.88E-01	2.52E-01
1.00E-02	4.40E-01	-1.85E-01	2.52E-01
2.00E-02	4.40E-01	-1.82E-01	2.53E-01
3.00E-02	4.40E-01	-1.79E-01	2.53E-01
4.00E-02	4.40E-01	-1.76E-01	2.54E-01
5.00E-02	4.40E-01	-1.73E-01	2.54E-01
6.00E-02	4.40E-01	-1.70E-01	2.55E-01
7.00E-02	4.40E-01	-1.67E-01	2.56E-01
8.00E-02	4.40E-01	-1.63E-01	2.56E-01
9.00E-02	4.40E-01	-1.60E-01	2.57E-01
1.00E-01	4.40E-01	-1.57E-01	2.57E-01
1.10E-01	4.40E-01	-1.54E-01	2.58E-01
1.20E-01	4.40E-01	-1.50E-01	2.58E

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	4.50E-01	-1.92E-01	2.58E-01
1.00E-02	4.50E-01	-1.89E-01	2.59E-01
2.00E-02	4.50E-01	-1.86E-01	2.59E-01
3.00E-02	4.50E-01	-1.82E-01	2.60E-01
4.00E-02	4.50E-01	-1.79E-01	2.61E-01
5.00E-02	4.50E-01	-1.76E-01	2.61E-01
6.00E-02	4.50E-01	-1.73E-01	2.62E-01
7.00E-02	4.50E-01	-1.70E-01	2.62E-01
8.00E-02	4.50E-01	-1.66E-01	2.63E-01
9.00E-02	4.50E-01	-1.63E-01	2.64E-01
1.00E-01	4.50E-01	-1.60E-01	2.64E-01
1.10E-01	4.50E-01	-1.56E-01	2.65E-01
1.20E-01	4.50E-01	-1.53E-01	2.66E-01
1.30E-01	4.50E-01	-1.50E-01	2.66E-01
1.40E-01	4.50E-01	-1.46E-01	2.67E-01
1.50E-01	4.50E-01	-1.43E-01	2.67E-01
1.60E-01	4.50E-01	-1.39E-01	2.68E-01
1.70E-01	4.50E-01	-1.36E-01	2.69E-01
1.80E-01	4.50E-01	-1.32E-01	2.70E-01
1.90E-01	4.50E-01	-1.28E-01	2.70E-01
2.00E-01	4.50E-01	-1.25E-01	2.71E-01
2.10E-01	4.50E-01	-1.21E-01	2.72E-01
2.20E-01	4.50E-01	-1.17E-01	2.72E-01
2.30E-01	4.50E-01	-1.13E-01	2.73E-01
2.40E-01	4.50E-01	-1.09E-01	2.74E-01
2.50E-01	4.50E-01	-1.06E-01	2.75E-01
2.60E-01	4.50E-01	-1.02E-01	2.76E-01
2.70E-01	4.50E-01	-9.76E-02	2.76E-01
2.80E-01	4.50E-01	-9.36E-02	2.77E-01
2.90E-01	4.50E-01	-8.95E-02	2.78E-01
3.00E-01	4.50E-01	-8.53E-02	2.79E-01
3.10E-01	4.50E-01	-8.12E-02	2.80E-01
3.20E-01	4.50E-01	-7.69E-02	2.81E-01
3.30E-01	4.50E-01	-7.26E-02	2.81E-01
3.40E-01	4.50E-01	-6.83E-02	2.82E-01
3.50E-01	4.50E-01	-6.39E-02	2.83E-01
3.60E-01	4.50E-01	-5.95E-02	2.84E-01
3.70E-01	4.50E-01	-5.50E-02	2.85E-01
3.80E-01	4.50E-01	-5.05E-02	2.86E-01
3.90E-01	4.50E-01	-4.59E-02	2.87E-01
4.00E-01	4.50E-01	-4.12E-02	2.88E-01
4.10E-01	4.50E-01	-3.65E-02	2.89E-01
4.20E-01	4.50E-01	-3.17E-02	2.90E-01
4.30E-01	4.50E-01	-2.69E-02	2.91E-01
4.40E-01	4.50E-01	-2.20E-02	2.92E-01
4.50E-01	4.50E-01	-1.70E-02	2.93E-01
4.60E-01	4.50E-01	-1.20E-02	2.94E-01
4.70E-01	4.50E-01	-6.86E-03	2.96E-01
4.80E-01	4.50E-01	-1.70E-03	2.97E-01
4.90E-01	4.50E-01	3.54E-03	2.98E-01
5.00E-01	4.50E-01	8.85E-03	2.99E-01
5.10E-01	4.50E-01	1.42E-02	3.00E-01
5.20E-01	4.50E-01	1.97E-02	3.02E-01
5.30E-01	4.50E-01	2.52E-02	3.03E-01
5.40E-01	4.50E-01	3.08E-02	3.04E-01
5.50E-01	4.50E-01	3.65E-02	3.06E-01
5.60E-01	4.50E-01	4.23E-02	3.07E-01
5.70E-01	4.50E-01	4.81E-02	3.08E-01
5.80E-01	4.50E-01	5.41E-02	3.10E-01
5.90E-01	4.50E-01	6.01E-02	3.11E-01
6.00E-01	4.50E-01	6.62E-02	3.13E-01
6.10E-01	4.50E-01	7.24E-02	3.14E-01
6.20E-01	4.50E-01	7.87E-02	3.16E-01
6.30E-01	4.50E-01	8.51E-02	3.18E-01
6.40E-01	4.50E-01	9.16E-02	3.19E-01
6.50E-01	4.50E-01	9.82E-02	3.21E-01
6.60E-01	4.50E-01	1.05E-01	3.23E-01
6.70E-01	4.50E-01	1.12E-01	3.24E-01
6.80E-01	4.50E-01	1.19E-01	3.26E-01
6.90E-01	4.50E-01	1.26E-01	3.28E-01
7.00E-01	4.50E-01	1.33E-01	3.30E-01
7.10E-01	4.50E-01	1.40E-01	3.32E-01
7.20E-01	4.50E-01	1.48E-01	3.34E-01
7.30E-01	4.50E-01	1.55E-01	3.36E-01
7.40E-01	4.50E-01	1.63E-01	3.38E-01
7.50E-01	4.50E-01	1.71E-01	3.41E-01
7.60E-01	4.50E-01	1.79E-01	3.43E-01
7.70E-01	4.50E-01	1.87E-01	3.45E-01
7.80E-01	4.50E-01	1.95E-01	3.48E-01
7.90E-01	4.50E-01	2.04E-01	3.50E-01
8.00E-01	4.50E-01	2.12E-01	3.53E-01
8.10E-01	4.50E-01	2.21E-01	3.56E-01
8.20E-01	4.50E-01	2.30E-01	3.58E-01
8.30E-01	4.50E-01	2.39E-01	3.61E-01
8.40E-01	4.50E-01	2.49E-01	3.64E-01
8.50E-01	4.50E-01	2.58E-01	3.67E-01
8.60E-01	4.50E-01	2.68E-01	3.71E-01
8.70E-01	4.50E-01	2.78E-01	3.74E-01
8.80E-01	4.50E-01	2.88E-01	3.78E-01
8.90E-01	4.50E-01	2.99E-01	3.82E-01
9.00E-01	4.50E-01	3.10E-01	3.86E-01
9.10E-01	4.50E-01	3.21E-01	3.90E-01
9.20E-01	4.50E-01	3.33E-01	3.94E-01
9.30E-01	4.50E-01	3.45E-01	3.99E-01
9.40E-01	4.50E-01	3.57E-01	4.04E-01
9.50E-01	4.50E-01	3.70E-01	4.09E-01
9.60E-01	4.50E-01	3.84E-01	4.15E-01
9.70E-01	4.50E-01	3.98E-01	4.22E-01
9.80E-01	4.50E-01	4.13E-01	4.29E-01
9.90E-01	4.50E-01	4.30E-01	4.38E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	4.60E-01	-1.95E-01	2.65E-01
1.00E-02	4.60E-01	-1.92E-01	2.66E-01
2.00E-02	4.60E-01	-1.89E-01	2.66E-01
3.00E-02	4.60E-01	-1.86E-01	2.67E-01
4.00E-02	4.60E-01	-1.82E-01	2.68E-01
5.00E-02	4.60E-01	-1.79E-01	2.68E-01
6.00E-02	4.60E-01	-1.76E-01	2.69E-01
7.00E-02	4.60E-01	-1.73E-01	2.69E-01
8.00E-02	4.60E-01	-1.69E-01	2.70E-01
9.00E-02	4.60E-01	-1.66E-01	2.71E-01
1.00E-01	4.60E-01	-1.63E-01	2.71E-01
1.10E-01	4.60E-01	-1.59E-01	2.72E-01
1.20E-01	4.60E-01	-1.56E-01	2.73E-01
1.30E-01	4.60E-01	-1.52E-01	2.73E-01
1.40E-01	4.60E-01	-1.49E-01	2.74E-01
1.50E-01	4.60E-01	-1.45E-01	2.75E-01
1.60E-01	4.60E-01	-1.42E-01	2.75E-01
1.70E-01	4.60E-01	-1.38E-01	2.76E-01
1.80E-01	4.60E-01	-1.34E-01	2.77E-01
1.90E-01	4.60E-01	-1.31E-01	2.78E-01
2.00E-01	4.60E-01	-1.27E-01	2.78E-01
2.10E-01	4.60E-01	-1.23E-01	2.79E-01
2.20E-01	4.60E-01	-1.19E-01	2.80E-01
2.30E-01	4.60E-01	-1.15E-01	2.81E-01
2.40E-01	4.60E-01	-1.12E-01	2.81E-01
2.50E-01	4.60E-01	-1.08E-01	2.82E-01
2.60E-01	4.60E-01	-1.04E-01	2.83E-01
2.70E-01	4.60E-01	-9.95E-02	2.84E-01
2.80E-01	4.60E-01	-9.54E-02	2.85E-01
2.90E-01	4.60E-01	-9.13E-02	2.86E-01
3.00E-01	4.60E-01	-8.71E-02	2.86E-01
3.10E-01	4.60E-01	-8.28E-02	2.87E-01
3.20E-01	4.60E-01	-7.85E-02	2.88E-01
3.30E-01	4.60E-01	-7.42E-02	2.89E-01
3.40E-01	4.60E-01	-6.98E-02	2.90E-01
3.50E-01	4.60E-01	-6.53E-02	2.91E-01
3.60E-01	4.60E-01	-6.08E-02	2.92E-01
3.70E-01	4.60E-01	-5.62E-02	2.93E-01
3.80E-01	4.60E-01	-5.16E-02	2.94E-01
3.90E-01	4.60E-01	-4.69E-02	2.95E-01
4.00E-01	4.60E-01	-4.22E-02	2.96E-01
4.10E-01	4.60E-01	-3.74E-02	2.97E-01
4.20E-01	4.60E-01	-3.25E-02	2.98E-01
4.30E-01	4.60E-01	-2.76E-02	2.99E-01
4.40E-01	4.60E-01	-2.26E-02	3.00E-01
4.50E-01	4.60E-01	-1.75E-02	3.02E-01
4.60E-01	4.60E-01	-1.24E-02	3.03E-01
4.70E-01	4.60E-01	-7.17E-03	3.04E-01
4.80E-01	4.60E-01	-1.90E-03	3.05E-01
4.90E-01	4.60E-01	3.44E-03	3.06E-01
5.00E-01	4.60E-01	8.86E-03	3.08E-01
5.10E-01	4.60E-01	1.43E-02	3.09E-01
5.20E-01	4.60E-01	1.99E-02	3.10E-01
5.30E-01	4.60E-01	2.56E-02	3.11E-01
5.40E-01	4.60E-01	3.13E-02	3.13E-01
5.50E-01	4.60E-01	3.71E-02	3.14E-01
5.60E-01	4.60E-01	4.30E-02	3.16E-01
5.70E-01	4.60E-01	4.90E-02	3.17E-01
5.80E-01	4.60E-01	5.50E-02	3.19E-01
5.90E-01	4.60E-01	6.12E-02	3.20E-01
6.00E-01	4.60E-01	6.74E-02	3.22E-01
6.10E-01	4.60E-01	7.38E-02	3.23E-01
6.20E-01	4.60E-01	8.02E-02	3.25E-01
6.30E-01	4.60E-01	8.68E-02	3.26E-01
6.40E-01	4.60E-01	9.34E-02	3.28E-01
6.50E-01	4.60E-01	1.00E-01	3.30E-01
6.60E-01	4.60E-01	1.07E-01	3.32E-01
6.70E-01	4.60E-01	1.14E-01	3.33E-01
6.80E-01	4.60E-01	1.21E-01	3.35E-01
6.90E-01	4.60E-01	1.28E-01	3.37E-01
7.00E-01	4.60E-01	1.36E-01	3.39E-01
7.10E-01	4.60E-01	1.43E-01	3.41E-01
7.20E-01	4.60E-01	1.51E-01	3.43E-01
7.30E-01	4.60E-01	1.59E-01	3.46E-01
7.40E-01	4.60E-01	1.66E-01	3.48E-01
7.50E-01	4.60E-01	1.74E-01	3.50E-01
7.60E-01	4.60E-01	1.83E-01	3.52E-01
7.70E-01	4.60E-01	1.91E-01	3.55E-01
7.80E-01	4.60E-01	1.99E-01	3.57E-01
7.90E-01	4.60E-01	2.08E-01	3.60E-01
8.00E-01	4.60E-01	2.17E-01	3.62E-01
8.10E-01	4.60E-01	2.26E-01	3.65E-01
8.20E-01	4.60E-01	2.35E-01	3.68E-01
8.30E-01	4.60E-01	2.45E-01	3.71E-01
8.40E-01	4.60E-01	2.54E-01	3.74E-01
8.50E-01	4.60E-01	2.64E-01	3.77E-01
8.60E-01	4.60E-01	2.74E-01	3.81E-01
8.70E-01	4.60E-01	2.84E-01	3.84E-01
8.80E-01	4.60E-01	2.95E-01	3.88E-01
8.90E-01	4.60E-01	3.06E-01	3.92E-01
9.00E-01	4.60E-01	3.17E-01	3.96E-01
9.10E-01	4.60E-01	3.29E-01	4.00E-01
9.20E-01	4.60E-01	3.40E-01	4.04E-01
9.30E-01	4.60E-01	3.53E-01	4.09E-01
9.40E-01	4.60E-01	3.65E-01	4.14E-01
9.50E-01	4.60E-01	3.79E-01	4.20E-01
9.60E-01	4.60E-01	3.92E-01	4.25E-01
9.70E-01	4.60E-01	4.07E-01	4.32E-01
9.80E-01	4.60E-01	4.22E-01	4.39E-01
9.90E-01	4.60E-01	4.39E-01	4.48E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	4.70E-01	-1.98E-01	2.72E-01
1.00E-02	4.70E-01	-1.95E-01	2.73E-01
2.00E-02	4.70E-01	-1.92E-01	2.73E-01
3.00E-02	4.70E-01	-1.89E-01	2.74E-01
4.00E-02	4.70E-01	-1.85E-01	2.74E-01
5.00E-02	4.70E-01	-1.82E-01	2.75E-01
6.00E-02	4.70E-01	-1.79E-01	2.76E-01
7.00E-02	4.70E-01	-1.76E-01	2.76E-01
8.00E-02	4.70E-01	-1.72E-01	2.77E-01
9.00E-02	4.70E-01	-1.69E-01	2.78E-01
1.00E-01	4.70E-01	-1.65E-01	2.78E-01
1.10E-01	4.70E-01	-1.62E-01	2.79E-01
1.20E-01	4.70E-01	-1.59E-01	2.80E

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	4.80E-01	-2.01E-01	2.79E-01
1.00E-02	4.80E-01	-1.98E-01	2.80E-01
2.00E-02	4.80E-01	-1.95E-01	2.80E-01
3.00E-02	4.80E-01	-1.92E-01	2.81E-01
4.00E-02	4.80E-01	-1.88E-01	2.81E-01
5.00E-02	4.80E-01	-1.85E-01	2.82E-01
6.00E-02	4.80E-01	-1.82E-01	2.83E-01
7.00E-02	4.80E-01	-1.78E-01	2.83E-01
8.00E-02	4.80E-01	-1.75E-01	2.84E-01
9.00E-02	4.80E-01	-1.72E-01	2.85E-01
1.00E-01	4.80E-01	-1.68E-01	2.86E-01
1.10E-01	4.80E-01	-1.65E-01	2.86E-01
1.20E-01	4.80E-01	-1.61E-01	2.87E-01
1.30E-01	4.80E-01	-1.58E-01	2.88E-01
1.40E-01	4.80E-01	-1.54E-01	2.89E-01
1.50E-01	4.80E-01	-1.50E-01	2.89E-01
1.60E-01	4.80E-01	-1.47E-01	2.90E-01
1.70E-01	4.80E-01	-1.43E-01	2.91E-01
1.80E-01	4.80E-01	-1.39E-01	2.92E-01
1.90E-01	4.80E-01	-1.35E-01	2.92E-01
2.00E-01	4.80E-01	-1.32E-01	2.93E-01
2.10E-01	4.80E-01	-1.28E-01	2.94E-01
2.20E-01	4.80E-01	-1.24E-01	2.95E-01
2.30E-01	4.80E-01	-1.20E-01	2.96E-01
2.40E-01	4.80E-01	-1.16E-01	2.97E-01
2.50E-01	4.80E-01	-1.12E-01	2.97E-01
2.60E-01	4.80E-01	-1.08E-01	2.98E-01
2.70E-01	4.80E-01	-1.03E-01	2.99E-01
2.80E-01	4.80E-01	-9.91E-02	3.00E-01
2.90E-01	4.80E-01	-9.48E-02	3.01E-01
3.00E-01	4.80E-01	-9.05E-02	3.02E-01
3.10E-01	4.80E-01	-8.61E-02	3.03E-01
3.20E-01	4.80E-01	-8.17E-02	3.04E-01
3.30E-01	4.80E-01	-7.72E-02	3.05E-01
3.40E-01	4.80E-01	-7.26E-02	3.06E-01
3.50E-01	4.80E-01	-6.80E-02	3.07E-01
3.60E-01	4.80E-01	-6.34E-02	3.08E-01
3.70E-01	4.80E-01	-5.86E-02	3.09E-01
3.80E-01	4.80E-01	-5.39E-02	3.10E-01
3.90E-01	4.80E-01	-4.90E-02	3.11E-01
4.00E-01	4.80E-01	-4.41E-02	3.12E-01
4.10E-01	4.80E-01	-3.91E-02	3.13E-01
4.20E-01	4.80E-01	-3.41E-02	3.15E-01
4.30E-01	4.80E-01	-2.90E-02	3.16E-01
4.40E-01	4.80E-01	-2.38E-02	3.17E-01
4.50E-01	4.80E-01	-1.85E-02	3.18E-01
4.60E-01	4.80E-01	-1.32E-02	3.19E-01
4.70E-01	4.80E-01	-7.84E-03	3.21E-01
4.80E-01	4.80E-01	-2.37E-03	3.22E-01
4.90E-01	4.80E-01	3.18E-03	3.23E-01
5.00E-01	4.80E-01	8.80E-03	3.25E-01
5.10E-01	4.80E-01	1.45E-02	3.26E-01
5.20E-01	4.80E-01	2.03E-02	3.27E-01
5.30E-01	4.80E-01	2.62E-02	3.29E-01
5.40E-01	4.80E-01	3.21E-02	3.30E-01
5.50E-01	4.80E-01	3.82E-02	3.32E-01
5.60E-01	4.80E-01	4.43E-02	3.33E-01
5.70E-01	4.80E-01	5.05E-02	3.35E-01
5.80E-01	4.80E-01	5.68E-02	3.36E-01
5.90E-01	4.80E-01	6.33E-02	3.38E-01
6.00E-01	4.80E-01	6.98E-02	3.39E-01
6.10E-01	4.80E-01	7.64E-02	3.41E-01
6.20E-01	4.80E-01	8.31E-02	3.43E-01
6.30E-01	4.80E-01	9.00E-02	3.45E-01
6.40E-01	4.80E-01	9.69E-02	3.46E-01
6.50E-01	4.80E-01	1.04E-01	3.48E-01
6.60E-01	4.80E-01	1.11E-01	3.50E-01
6.70E-01	4.80E-01	1.18E-01	3.52E-01
6.80E-01	4.80E-01	1.26E-01	3.54E-01
6.90E-01	4.80E-01	1.33E-01	3.56E-01
7.00E-01	4.80E-01	1.41E-01	3.58E-01
7.10E-01	4.80E-01	1.49E-01	3.60E-01
7.20E-01	4.80E-01	1.57E-01	3.62E-01
7.30E-01	4.80E-01	1.65E-01	3.64E-01
7.40E-01	4.80E-01	1.73E-01	3.67E-01
7.50E-01	4.80E-01	1.82E-01	3.69E-01
7.60E-01	4.80E-01	1.90E-01	3.72E-01
7.70E-01	4.80E-01	1.99E-01	3.74E-01
7.80E-01	4.80E-01	2.08E-01	3.77E-01
7.90E-01	4.80E-01	2.17E-01	3.79E-01
8.00E-01	4.80E-01	2.26E-01	3.82E-01
8.10E-01	4.80E-01	2.36E-01	3.85E-01
8.20E-01	4.80E-01	2.45E-01	3.88E-01
8.30E-01	4.80E-01	2.55E-01	3.91E-01
8.40E-01	4.80E-01	2.65E-01	3.94E-01
8.50E-01	4.80E-01	2.76E-01	3.97E-01
8.60E-01	4.80E-01	2.86E-01	4.01E-01
8.70E-01	4.80E-01	2.97E-01	4.04E-01
8.80E-01	4.80E-01	3.08E-01	4.08E-01
8.90E-01	4.80E-01	3.20E-01	4.12E-01
9.00E-01	4.80E-01	3.31E-01	4.16E-01
9.10E-01	4.80E-01	3.43E-01	4.20E-01
9.20E-01	4.80E-01	3.56E-01	4.25E-01
9.30E-01	4.80E-01	3.69E-01	4.29E-01
9.40E-01	4.80E-01	3.82E-01	4.34E-01
9.50E-01	4.80E-01	3.96E-01	4.40E-01
9.60E-01	4.80E-01	4.10E-01	4.46E-01
9.70E-01	4.80E-01	4.25E-01	4.52E-01
9.80E-01	4.80E-01	4.41E-01	4.60E-01
9.90E-01	4.80E-01	4.59E-01	4.68E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	4.90E-01	-2.04E-01	2.86E-01
1.00E-02	4.90E-01	-2.01E-01	2.87E-01
2.00E-02	4.90E-01	-1.98E-01	2.87E-01
3.00E-02	4.90E-01	-1.95E-01	2.88E-01
4.00E-02	4.90E-01	-1.91E-01	2.89E-01
5.00E-02	4.90E-01	-1.88E-01	2.89E-01
6.00E-02	4.90E-01	-1.85E-01	2.90E-01
7.00E-02	4.90E-01	-1.81E-01	2.91E-01
8.00E-02	4.90E-01	-1.78E-01	2.91E-01
9.00E-02	4.90E-01	-1.74E-01	2.92E-01
1.00E-01	4.90E-01	-1.71E-01	2.93E-01
1.10E-01	4.90E-01	-1.67E-01	2.94E-01
1.20E-01	4.90E-01	-1.64E-01	2.94E-01
1.30E-01	4.90E-01	-1.60E-01	2.95E-01
1.40E-01	4.90E-01	-1.57E-01	2.96E-01
1.50E-01	4.90E-01	-1.53E-01	2.97E-01
1.60E-01	4.90E-01	-1.49E-01	2.97E-01
1.70E-01	4.90E-01	-1.45E-01	2.98E-01
1.80E-01	4.90E-01	-1.42E-01	2.99E-01
1.90E-01	4.90E-01	-1.38E-01	3.00E-01
2.00E-01	4.90E-01	-1.34E-01	3.01E-01
2.10E-01	4.90E-01	-1.30E-01	3.02E-01
2.20E-01	4.90E-01	-1.26E-01	3.03E-01
2.30E-01	4.90E-01	-1.22E-01	3.03E-01
2.40E-01	4.90E-01	-1.18E-01	3.04E-01
2.50E-01	4.90E-01	-1.14E-01	3.05E-01
2.60E-01	4.90E-01	-1.09E-01	3.06E-01
2.70E-01	4.90E-01	-1.05E-01	3.07E-01
2.80E-01	4.90E-01	-1.01E-01	3.08E-01
2.90E-01	4.90E-01	-9.66E-02	3.09E-01
3.00E-01	4.90E-01	-9.22E-02	3.10E-01
3.10E-01	4.90E-01	-8.77E-02	3.11E-01
3.20E-01	4.90E-01	-8.32E-02	3.12E-01
3.30E-01	4.90E-01	-7.87E-02	3.13E-01
3.40E-01	4.90E-01	-7.41E-02	3.14E-01
3.50E-01	4.90E-01	-6.94E-02	3.15E-01
3.60E-01	4.90E-01	-6.46E-02	3.16E-01
3.70E-01	4.90E-01	-5.98E-02	3.17E-01
3.80E-01	4.90E-01	-5.50E-02	3.18E-01
3.90E-01	4.90E-01	-5.01E-02	3.19E-01
4.00E-01	4.90E-01	-4.51E-02	3.21E-01
4.10E-01	4.90E-01	-4.00E-02	3.22E-01
4.20E-01	4.90E-01	-3.49E-02	3.23E-01
4.30E-01	4.90E-01	-2.97E-02	3.24E-01
4.40E-01	4.90E-01	-2.44E-02	3.25E-01
4.50E-01	4.90E-01	-1.91E-02	3.27E-01
4.60E-01	4.90E-01	-1.37E-02	3.28E-01
4.70E-01	4.90E-01	-8.20E-03	3.29E-01
4.80E-01	4.90E-01	-2.64E-03	3.31E-01
4.90E-01	4.90E-01	3.01E-03	3.32E-01
5.00E-01	4.90E-01	8.73E-03	3.33E-01
5.10E-01	4.90E-01	1.45E-02	3.35E-01
5.20E-01	4.90E-01	2.04E-02	3.36E-01
5.30E-01	4.90E-01	2.64E-02	3.37E-01
5.40E-01	4.90E-01	3.25E-02	3.39E-01
5.50E-01	4.90E-01	3.86E-02	3.40E-01
5.60E-01	4.90E-01	4.49E-02	3.42E-01
5.70E-01	4.90E-01	5.12E-02	3.44E-01
5.80E-01	4.90E-01	5.77E-02	3.45E-01
5.90E-01	4.90E-01	6.42E-02	3.47E-01
6.00E-01	4.90E-01	7.09E-02	3.48E-01
6.10E-01	4.90E-01	7.76E-02	3.50E-01
6.20E-01	4.90E-01	8.45E-02	3.52E-01
6.30E-01	4.90E-01	9.15E-02	3.54E-01
6.40E-01	4.90E-01	9.86E-02	3.56E-01
6.50E-01	4.90E-01	1.06E-01	3.57E-01
6.60E-01	4.90E-01	1.13E-01	3.59E-01
6.70E-01	4.90E-01	1.21E-01	3.61E-01
6.80E-01	4.90E-01	1.28E-01	3.63E-01
6.90E-01	4.90E-01	1.36E-01	3.65E-01
7.00E-01	4.90E-01	1.44E-01	3.67E-01
7.10E-01	4.90E-01	1.52E-01	3.70E-01
7.20E-01	4.90E-01	1.60E-01	3.72E-01
7.30E-01	4.90E-01	1.68E-01	3.74E-01
7.40E-01	4.90E-01	1.77E-01	3.76E-01
7.50E-01	4.90E-01	1.85E-01	3.79E-01
7.60E-01	4.90E-01	1.94E-01	3.81E-01
7.70E-01	4.90E-01	2.03E-01	3.84E-01
7.80E-01	4.90E-01	2.12E-01	3.86E-01
7.90E-01	4.90E-01	2.21E-01	3.89E-01
8.00E-01	4.90E-01	2.31E-01	3.92E-01
8.10E-01	4.90E-01	2.40E-01	3.95E-01
8.20E-01	4.90E-01	2.50E-01	3.98E-01
8.30E-01	4.90E-01	2.60E-01	4.01E-01
8.40E-01	4.90E-01	2.71E-01	4.04E-01
8.50E-01	4.90E-01	2.81E-01	4.07E-01
8.60E-01	4.90E-01	2.92E-01	4.11E-01
8.70E-01	4.90E-01	3.03E-01	4.14E-01
8.80E-01	4.90E-01	3.15E-01	4.18E-01
8.90E-01	4.90E-01	3.26E-01	4.22E-01
9.00E-01	4.90E-01	3.38E-01	4.26E-01
9.10E-01	4.90E-01	3.51E-01	4.30E-01
9.20E-01	4.90E-01	3.64E-01	4.35E-01
9.30E-01	4.90E-01	3.77E-01	4.40E-01
9.40E-01	4.90E-01	3.90E-01	4.45E-01
9.50E-01	4.90E-01	4.04E-01	4.50E-01
9.60E-01	4.90E-01	4.19E-01	4.56E-01
9.70E-01	4.90E-01	4.35E-01	4.63E-01
9.80E-01	4.90E-01	4.51E-01	4.70E-01
9.90E-01	4.90E-01	4.69E-01	4.78E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	5.00E-01	-2.07E-01	2.93E-01
1.00E-02	5.00E-01	-2.04E-01	2.94E-01
2.00E-02	5.00E-01	-2.01E-01	2.94E-01
3.00E-02	5.00E-01	-1.97E-01	2.95E-01
4.00E-02	5.00E-01	-1.94E-01	2.96E-01
5.00E-02	5.00E-01	-1.91E-01	2.96E-01
6.00E-02	5.00E-01	-1.87E-01	2.97E-01
7.00E-02	5.00E-01	-1.84E-01	2.98E-01
8.00E-02	5.00E-01	-1.81E-01	2.99E-01
9.00E-02	5.00E-01	-1.77E-01	2.99E-01
1.00E-01	5.00E-01	-1.74E-01	3.00E-01
1.10E-01	5.00E-01	-1.70E-01	3.01E-01
1.20E-01	5.00E-01	-1.66E-01	3.02

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	5.10E-01	-2.10E-01	3.00E-01
1.00E-02	5.10E-01	-2.07E-01	3.01E-01
2.00E-02	5.10E-01	-2.04E-01	3.01E-01
3.00E-02	5.10E-01	-2.00E-01	3.02E-01
4.00E-02	5.10E-01	-1.97E-01	3.03E-01
5.00E-02	5.10E-01	-1.94E-01	3.04E-01
6.00E-02	5.10E-01	-1.90E-01	3.04E-01
7.00E-02	5.10E-01	-1.87E-01	3.05E-01
8.00E-02	5.10E-01	-1.83E-01	3.06E-01
9.00E-02	5.10E-01	-1.80E-01	3.07E-01
1.00E-01	5.10E-01	-1.76E-01	3.08E-01
1.10E-01	5.10E-01	-1.73E-01	3.08E-01
1.20E-01	5.10E-01	-1.69E-01	3.09E-01
1.30E-01	5.10E-01	-1.65E-01	3.10E-01
1.40E-01	5.10E-01	-1.61E-01	3.11E-01
1.50E-01	5.10E-01	-1.58E-01	3.12E-01
1.60E-01	5.10E-01	-1.54E-01	3.13E-01
1.70E-01	5.10E-01	-1.50E-01	3.13E-01
1.80E-01	5.10E-01	-1.46E-01	3.14E-01
1.90E-01	5.10E-01	-1.42E-01	3.15E-01
2.00E-01	5.10E-01	-1.38E-01	3.16E-01
2.10E-01	5.10E-01	-1.34E-01	3.17E-01
2.20E-01	5.10E-01	-1.30E-01	3.18E-01
2.30E-01	5.10E-01	-1.26E-01	3.19E-01
2.40E-01	5.10E-01	-1.22E-01	3.20E-01
2.50E-01	5.10E-01	-1.18E-01	3.21E-01
2.60E-01	5.10E-01	-1.13E-01	3.22E-01
2.70E-01	5.10E-01	-1.09E-01	3.23E-01
2.80E-01	5.10E-01	-1.04E-01	3.24E-01
2.90E-01	5.10E-01	-1.00E-01	3.25E-01
3.00E-01	5.10E-01	-9.55E-02	3.26E-01
3.10E-01	5.10E-01	-9.09E-02	3.27E-01
3.20E-01	5.10E-01	-8.63E-02	3.28E-01
3.30E-01	5.10E-01	-8.16E-02	3.29E-01
3.40E-01	5.10E-01	-7.69E-02	3.30E-01
3.50E-01	5.10E-01	-7.21E-02	3.31E-01
3.60E-01	5.10E-01	-6.72E-02	3.33E-01
3.70E-01	5.10E-01	-6.23E-02	3.34E-01
3.80E-01	5.10E-01	-5.73E-02	3.35E-01
3.90E-01	5.10E-01	-5.22E-02	3.36E-01
4.00E-01	5.10E-01	-4.70E-02	3.37E-01
4.10E-01	5.10E-01	-4.18E-02	3.39E-01
4.20E-01	5.10E-01	-3.66E-02	3.40E-01
4.30E-01	5.10E-01	-3.12E-02	3.41E-01
4.40E-01	5.10E-01	-2.58E-02	3.42E-01
4.50E-01	5.10E-01	-2.03E-02	3.44E-01
4.60E-01	5.10E-01	-1.47E-02	3.45E-01
4.70E-01	5.10E-01	-9.00E-03	3.47E-01
4.80E-01	5.10E-01	-3.25E-03	3.48E-01
4.90E-01	5.10E-01	2.58E-03	3.49E-01
5.00E-01	5.10E-01	8.50E-03	3.51E-01
5.10E-01	5.10E-01	1.45E-02	3.52E-01
5.20E-01	5.10E-01	2.06E-02	3.54E-01
5.30E-01	5.10E-01	2.68E-02	3.55E-01
5.40E-01	5.10E-01	3.31E-02	3.57E-01
5.50E-01	5.10E-01	3.95E-02	3.58E-01
5.60E-01	5.10E-01	4.59E-02	3.60E-01
5.70E-01	5.10E-01	5.25E-02	3.62E-01
5.80E-01	5.10E-01	5.92E-02	3.63E-01
5.90E-01	5.10E-01	6.60E-02	3.65E-01
6.00E-01	5.10E-01	7.29E-02	3.67E-01
6.10E-01	5.10E-01	7.99E-02	3.69E-01
6.20E-01	5.10E-01	8.70E-02	3.70E-01
6.30E-01	5.10E-01	9.43E-02	3.72E-01
6.40E-01	5.10E-01	1.02E-01	3.74E-01
6.50E-01	5.10E-01	1.09E-01	3.76E-01
6.60E-01	5.10E-01	1.17E-01	3.78E-01
6.70E-01	5.10E-01	1.25E-01	3.80E-01
6.80E-01	5.10E-01	1.32E-01	3.82E-01
6.90E-01	5.10E-01	1.40E-01	3.84E-01
7.00E-01	5.10E-01	1.49E-01	3.87E-01
7.10E-01	5.10E-01	1.57E-01	3.89E-01
7.20E-01	5.10E-01	1.65E-01	3.91E-01
7.30E-01	5.10E-01	1.74E-01	3.94E-01
7.40E-01	5.10E-01	1.83E-01	3.96E-01
7.50E-01	5.10E-01	1.92E-01	3.98E-01
7.60E-01	5.10E-01	2.01E-01	4.01E-01
7.70E-01	5.10E-01	2.10E-01	4.04E-01
7.80E-01	5.10E-01	2.20E-01	4.06E-01
7.90E-01	5.10E-01	2.30E-01	4.09E-01
8.00E-01	5.10E-01	2.40E-01	4.12E-01
8.10E-01	5.10E-01	2.50E-01	4.15E-01
8.20E-01	5.10E-01	2.60E-01	4.18E-01
8.30E-01	5.10E-01	2.71E-01	4.21E-01
8.40E-01	5.10E-01	2.82E-01	4.24E-01
8.50E-01	5.10E-01	2.93E-01	4.28E-01
8.60E-01	5.10E-01	3.04E-01	4.31E-01
8.70E-01	5.10E-01	3.16E-01	4.35E-01
8.80E-01	5.10E-01	3.27E-01	4.39E-01
8.90E-01	5.10E-01	3.40E-01	4.42E-01
9.00E-01	5.10E-01	3.52E-01	4.47E-01
9.10E-01	5.10E-01	3.65E-01	4.51E-01
9.20E-01	5.10E-01	3.79E-01	4.55E-01
9.30E-01	5.10E-01	3.92E-01	4.60E-01
9.40E-01	5.10E-01	4.07E-01	4.65E-01
9.50E-01	5.10E-01	4.21E-01	4.71E-01
9.60E-01	5.10E-01	4.37E-01	4.77E-01
9.70E-01	5.10E-01	4.53E-01	4.83E-01
9.80E-01	5.10E-01	4.70E-01	4.90E-01
9.90E-01	5.10E-01	4.88E-01	4.98E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	5.20E-01	-2.13E-01	3.07E-01
1.00E-02	5.20E-01	-2.10E-01	3.08E-01
2.00E-02	5.20E-01	-2.06E-01	3.09E-01
3.00E-02	5.20E-01	-2.03E-01	3.09E-01
4.00E-02	5.20E-01	-2.00E-01	3.10E-01
5.00E-02	5.20E-01	-1.96E-01	3.11E-01
6.00E-02	5.20E-01	-1.93E-01	3.12E-01
7.00E-02	5.20E-01	-1.89E-01	3.13E-01
8.00E-02	5.20E-01	-1.86E-01	3.13E-01
9.00E-02	5.20E-01	-1.82E-01	3.14E-01
1.00E-01	5.20E-01	-1.79E-01	3.15E-01
1.10E-01	5.20E-01	-1.75E-01	3.16E-01
1.20E-01	5.20E-01	-1.71E-01	3.17E-01
1.30E-01	5.20E-01	-1.68E-01	3.18E-01
1.40E-01	5.20E-01	-1.64E-01	3.18E-01
1.50E-01	5.20E-01	-1.60E-01	3.19E-01
1.60E-01	5.20E-01	-1.56E-01	3.20E-01
1.70E-01	5.20E-01	-1.52E-01	3.21E-01
1.80E-01	5.20E-01	-1.48E-01	3.22E-01
1.90E-01	5.20E-01	-1.44E-01	3.23E-01
2.00E-01	5.20E-01	-1.40E-01	3.24E-01
2.10E-01	5.20E-01	-1.36E-01	3.25E-01
2.20E-01	5.20E-01	-1.32E-01	3.26E-01
2.30E-01	5.20E-01	-1.28E-01	3.27E-01
2.40E-01	5.20E-01	-1.24E-01	3.28E-01
2.50E-01	5.20E-01	-1.19E-01	3.29E-01
2.60E-01	5.20E-01	-1.15E-01	3.30E-01
2.70E-01	5.20E-01	-1.11E-01	3.31E-01
2.80E-01	5.20E-01	-1.06E-01	3.32E-01
2.90E-01	5.20E-01	-1.02E-01	3.33E-01
3.00E-01	5.20E-01	-9.71E-02	3.34E-01
3.10E-01	5.20E-01	-9.25E-02	3.35E-01
3.20E-01	5.20E-01	-8.78E-02	3.36E-01
3.30E-01	5.20E-01	-8.31E-02	3.37E-01
3.40E-01	5.20E-01	-7.83E-02	3.39E-01
3.50E-01	5.20E-01	-7.34E-02	3.40E-01
3.60E-01	5.20E-01	-6.85E-02	3.41E-01
3.70E-01	5.20E-01	-6.35E-02	3.42E-01
3.80E-01	5.20E-01	-5.84E-02	3.43E-01
3.90E-01	5.20E-01	-5.33E-02	3.45E-01
4.00E-01	5.20E-01	-4.80E-02	3.46E-01
4.10E-01	5.20E-01	-4.28E-02	3.47E-01
4.20E-01	5.20E-01	-3.74E-02	3.48E-01
4.30E-01	5.20E-01	-3.20E-02	3.50E-01
4.40E-01	5.20E-01	-2.65E-02	3.51E-01
4.50E-01	5.20E-01	-2.09E-02	3.53E-01
4.60E-01	5.20E-01	-1.52E-02	3.54E-01
4.70E-01	5.20E-01	-9.44E-03	3.55E-01
4.80E-01	5.20E-01	-3.60E-03	3.57E-01
4.90E-01	5.20E-01	2.32E-03	3.58E-01
5.00E-01	5.20E-01	8.34E-03	3.60E-01
5.10E-01	5.20E-01	1.44E-02	3.61E-01
5.20E-01	5.20E-01	2.06E-02	3.63E-01
5.30E-01	5.20E-01	2.69E-02	3.64E-01
5.40E-01	5.20E-01	3.33E-02	3.66E-01
5.50E-01	5.20E-01	3.98E-02	3.68E-01
5.60E-01	5.20E-01	4.64E-02	3.69E-01
5.70E-01	5.20E-01	5.31E-02	3.71E-01
5.80E-01	5.20E-01	5.99E-02	3.73E-01
5.90E-01	5.20E-01	6.68E-02	3.74E-01
6.00E-01	5.20E-01	7.38E-02	3.76E-01
6.10E-01	5.20E-01	8.10E-02	3.78E-01
6.20E-01	5.20E-01	8.82E-02	3.80E-01
6.30E-01	5.20E-01	9.56E-02	3.82E-01
6.40E-01	5.20E-01	1.03E-01	3.84E-01
6.50E-01	5.20E-01	1.11E-01	3.86E-01
6.60E-01	5.20E-01	1.19E-01	3.88E-01
6.70E-01	5.20E-01	1.26E-01	3.90E-01
6.80E-01	5.20E-01	1.34E-01	3.92E-01
6.90E-01	5.20E-01	1.43E-01	3.94E-01
7.00E-01	5.20E-01	1.51E-01	3.96E-01
7.10E-01	5.20E-01	1.60E-01	3.99E-01
7.20E-01	5.20E-01	1.68E-01	4.01E-01
7.30E-01	5.20E-01	1.77E-01	4.03E-01
7.40E-01	5.20E-01	1.86E-01	4.06E-01
7.50E-01	5.20E-01	1.95E-01	4.08E-01
7.60E-01	5.20E-01	2.05E-01	4.11E-01
7.70E-01	5.20E-01	2.14E-01	4.14E-01
7.80E-01	5.20E-01	2.24E-01	4.16E-01
7.90E-01	5.20E-01	2.34E-01	4.19E-01
8.00E-01	5.20E-01	2.44E-01	4.22E-01
8.10E-01	5.20E-01	2.54E-01	4.25E-01
8.20E-01	5.20E-01	2.65E-01	4.28E-01
8.30E-01	5.20E-01	2.76E-01	4.31E-01
8.40E-01	5.20E-01	2.87E-01	4.34E-01
8.50E-01	5.20E-01	2.98E-01	4.38E-01
8.60E-01	5.20E-01	3.10E-01	4.41E-01
8.70E-01	5.20E-01	3.22E-01	4.45E-01
8.80E-01	5.20E-01	3.34E-01	4.49E-01
8.90E-01	5.20E-01	3.46E-01	4.53E-01
9.00E-01	5.20E-01	3.59E-01	4.57E-01
9.10E-01	5.20E-01	3.72E-01	4.61E-01
9.20E-01	5.20E-01	3.86E-01	4.66E-01
9.30E-01	5.20E-01	4.00E-01	4.71E-01
9.40E-01	5.20E-01	4.15E-01	4.76E-01
9.50E-01	5.20E-01	4.30E-01	4.81E-01
9.60E-01	5.20E-01	4.45E-01	4.87E-01
9.70E-01	5.20E-01	4.62E-01	4.93E-01
9.80E-01	5.20E-01	4.79E-01	5.00E-01
9.90E-01	5.20E-01	4.98E-01	5.09E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	5.30E-01	-2.16E-01	3.14E-01
1.00E-02	5.30E-01	-2.12E-01	3.15E-01
2.00E-02	5.30E-01	-2.09E-01	3.16E-01
3.00E-02	5.30E-01	-2.06E-01	3.17E-01
4.00E-02	5.30E-01	-2.02E-01	3.18E-01
5.00E-02	5.30E-01	-1.99E-01	3.18E-01
6.00E-02	5.30E-01	-1.95E-01	3.19E-01
7.00E-02	5.30E-01	-1.92E-01	3.20E-01
8.00E-02	5.30E-01	-1.88E-01	3.21E-01
9.00E-02	5.30E-01	-1.85E-01	3.22E-01
1.00E-01	5.30E-01	-1.81E-01	3.23E-01
1.10E-01	5.30E-01	-1.77E-01	3.23E-01
1.20E-01	5.30E-01	-1.74E-01	3.24E

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	5.40E-01	-2.18E-01	3.22E-01
1.00E-02	5.40E-01	-2.15E-01	3.23E-01
2.00E-02	5.40E-01	-2.12E-01	3.23E-01
3.00E-02	5.40E-01	-2.08E-01	3.24E-01
4.00E-02	5.40E-01	-2.05E-01	3.25E-01
5.00E-02	5.40E-01	-2.01E-01	3.26E-01
6.00E-02	5.40E-01	-1.98E-01	3.27E-01
7.00E-02	5.40E-01	-1.94E-01	3.28E-01
8.00E-02	5.40E-01	-1.91E-01	3.28E-01
9.00E-02	5.40E-01	-1.87E-01	3.29E-01
1.00E-01	5.40E-01	-1.83E-01	3.30E-01
1.10E-01	5.40E-01	-1.80E-01	3.31E-01
1.20E-01	5.40E-01	-1.76E-01	3.32E-01
1.30E-01	5.40E-01	-1.72E-01	3.33E-01
1.40E-01	5.40E-01	-1.68E-01	3.34E-01
1.50E-01	5.40E-01	-1.65E-01	3.35E-01
1.60E-01	5.40E-01	-1.61E-01	3.36E-01
1.70E-01	5.40E-01	-1.57E-01	3.37E-01
1.80E-01	5.40E-01	-1.53E-01	3.38E-01
1.90E-01	5.40E-01	-1.49E-01	3.39E-01
2.00E-01	5.40E-01	-1.44E-01	3.40E-01
2.10E-01	5.40E-01	-1.40E-01	3.41E-01
2.20E-01	5.40E-01	-1.36E-01	3.42E-01
2.30E-01	5.40E-01	-1.32E-01	3.43E-01
2.40E-01	5.40E-01	-1.27E-01	3.44E-01
2.50E-01	5.40E-01	-1.23E-01	3.45E-01
2.60E-01	5.40E-01	-1.19E-01	3.46E-01
2.70E-01	5.40E-01	-1.14E-01	3.47E-01
2.80E-01	5.40E-01	-1.10E-01	3.48E-01
2.90E-01	5.40E-01	-1.05E-01	3.50E-01
3.00E-01	5.40E-01	-1.00E-01	3.51E-01
3.10E-01	5.40E-01	-9.56E-02	3.52E-01
3.20E-01	5.40E-01	-9.08E-02	3.53E-01
3.30E-01	5.40E-01	-8.60E-02	3.54E-01
3.40E-01	5.40E-01	-8.11E-02	3.55E-01
3.50E-01	5.40E-01	-7.61E-02	3.57E-01
3.60E-01	5.40E-01	-7.10E-02	3.58E-01
3.70E-01	5.40E-01	-6.59E-02	3.59E-01
3.80E-01	5.40E-01	-6.07E-02	3.61E-01
3.90E-01	5.40E-01	-5.54E-02	3.62E-01
4.00E-01	5.40E-01	-5.00E-02	3.63E-01
4.10E-01	5.40E-01	-4.46E-02	3.65E-01
4.20E-01	5.40E-01	-3.91E-02	3.66E-01
4.30E-01	5.40E-01	-3.35E-02	3.67E-01
4.40E-01	5.40E-01	-2.79E-02	3.69E-01
4.50E-01	5.40E-01	-2.21E-02	3.70E-01
4.60E-01	5.40E-01	-1.63E-02	3.72E-01
4.70E-01	5.40E-01	-1.04E-02	3.73E-01
4.80E-01	5.40E-01	-4.38E-03	3.75E-01
4.90E-01	5.40E-01	1.72E-03	3.76E-01
5.00E-01	5.40E-01	7.91E-03	3.78E-01
5.10E-01	5.40E-01	1.42E-02	3.79E-01
5.20E-01	5.40E-01	2.06E-02	3.81E-01
5.30E-01	5.40E-01	2.71E-02	3.83E-01
5.40E-01	5.40E-01	3.37E-02	3.84E-01
5.50E-01	5.40E-01	4.03E-02	3.86E-01
5.60E-01	5.40E-01	4.71E-02	3.88E-01
5.70E-01	5.40E-01	5.41E-02	3.90E-01
5.80E-01	5.40E-01	6.11E-02	3.91E-01
5.90E-01	5.40E-01	6.82E-02	3.93E-01
6.00E-01	5.40E-01	7.55E-02	3.95E-01
6.10E-01	5.40E-01	8.29E-02	3.97E-01
6.20E-01	5.40E-01	9.04E-02	3.99E-01
6.30E-01	5.40E-01	9.80E-02	4.01E-01
6.40E-01	5.40E-01	1.06E-01	4.03E-01
6.50E-01	5.40E-01	1.14E-01	4.05E-01
6.60E-01	5.40E-01	1.22E-01	4.07E-01
6.70E-01	5.40E-01	1.30E-01	4.09E-01
6.80E-01	5.40E-01	1.38E-01	4.11E-01
6.90E-01	5.40E-01	1.47E-01	4.14E-01
7.00E-01	5.40E-01	1.55E-01	4.16E-01
7.10E-01	5.40E-01	1.64E-01	4.18E-01
7.20E-01	5.40E-01	1.73E-01	4.21E-01
7.30E-01	5.40E-01	1.82E-01	4.23E-01
7.40E-01	5.40E-01	1.92E-01	4.26E-01
7.50E-01	5.40E-01	2.01E-01	4.28E-01
7.60E-01	5.40E-01	2.11E-01	4.31E-01
7.70E-01	5.40E-01	2.21E-01	4.34E-01
7.80E-01	5.40E-01	2.31E-01	4.36E-01
7.90E-01	5.40E-01	2.42E-01	4.39E-01
8.00E-01	5.40E-01	2.52E-01	4.42E-01
8.10E-01	5.40E-01	2.63E-01	4.45E-01
8.20E-01	5.40E-01	2.74E-01	4.48E-01
8.30E-01	5.40E-01	2.85E-01	4.52E-01
8.40E-01	5.40E-01	2.97E-01	4.55E-01
8.50E-01	5.40E-01	3.09E-01	4.58E-01
8.60E-01	5.40E-01	3.21E-01	4.62E-01
8.70E-01	5.40E-01	3.33E-01	4.66E-01
8.80E-01	5.40E-01	3.46E-01	4.69E-01
8.90E-01	5.40E-01	3.59E-01	4.73E-01
9.00E-01	5.40E-01	3.73E-01	4.78E-01
9.10E-01	5.40E-01	3.86E-01	4.82E-01
9.20E-01	5.40E-01	4.01E-01	4.86E-01
9.30E-01	5.40E-01	4.15E-01	4.91E-01
9.40E-01	5.40E-01	4.31E-01	4.96E-01
9.50E-01	5.40E-01	4.46E-01	5.02E-01
9.60E-01	5.40E-01	4.63E-01	5.08E-01
9.70E-01	5.40E-01	4.80E-01	5.14E-01
9.80E-01	5.40E-01	4.98E-01	5.21E-01
9.90E-01	5.40E-01	5.17E-01	5.29E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	5.50E-01	-2.21E-01	3.29E-01
1.00E-02	5.50E-01	-2.17E-01	3.30E-01
2.00E-02	5.50E-01	-2.14E-01	3.31E-01
3.00E-02	5.50E-01	-2.11E-01	3.32E-01
4.00E-02	5.50E-01	-2.07E-01	3.33E-01
5.00E-02	5.50E-01	-2.04E-01	3.33E-01
6.00E-02	5.50E-01	-2.00E-01	3.34E-01
7.00E-02	5.50E-01	-1.97E-01	3.35E-01
8.00E-02	5.50E-01	-1.93E-01	3.36E-01
9.00E-02	5.50E-01	-1.89E-01	3.37E-01
1.00E-01	5.50E-01	-1.86E-01	3.38E-01
1.10E-01	5.50E-01	-1.82E-01	3.39E-01
1.20E-01	5.50E-01	-1.78E-01	3.40E-01
1.30E-01	5.50E-01	-1.75E-01	3.41E-01
1.40E-01	5.50E-01	-1.71E-01	3.42E-01
1.50E-01	5.50E-01	-1.67E-01	3.43E-01
1.60E-01	5.50E-01	-1.63E-01	3.44E-01
1.70E-01	5.50E-01	-1.59E-01	3.45E-01
1.80E-01	5.50E-01	-1.55E-01	3.46E-01
1.90E-01	5.50E-01	-1.51E-01	3.47E-01
2.00E-01	5.50E-01	-1.46E-01	3.48E-01
2.10E-01	5.50E-01	-1.42E-01	3.49E-01
2.20E-01	5.50E-01	-1.38E-01	3.50E-01
2.30E-01	5.50E-01	-1.34E-01	3.51E-01
2.40E-01	5.50E-01	-1.29E-01	3.52E-01
2.50E-01	5.50E-01	-1.25E-01	3.53E-01
2.60E-01	5.50E-01	-1.20E-01	3.54E-01
2.70E-01	5.50E-01	-1.16E-01	3.56E-01
2.80E-01	5.50E-01	-1.11E-01	3.57E-01
2.90E-01	5.50E-01	-1.07E-01	3.58E-01
3.00E-01	5.50E-01	-1.02E-01	3.59E-01
3.10E-01	5.50E-01	-9.72E-02	3.60E-01
3.20E-01	5.50E-01	-9.23E-02	3.62E-01
3.30E-01	5.50E-01	-8.74E-02	3.63E-01
3.40E-01	5.50E-01	-8.24E-02	3.64E-01
3.50E-01	5.50E-01	-7.74E-02	3.65E-01
3.60E-01	5.50E-01	-7.23E-02	3.67E-01
3.70E-01	5.50E-01	-6.71E-02	3.68E-01
3.80E-01	5.50E-01	-6.18E-02	3.69E-01
3.90E-01	5.50E-01	-5.65E-02	3.71E-01
4.00E-01	5.50E-01	-5.11E-02	3.72E-01
4.10E-01	5.50E-01	-4.56E-02	3.73E-01
4.20E-01	5.50E-01	-4.00E-02	3.75E-01
4.30E-01	5.50E-01	-3.44E-02	3.76E-01
4.40E-01	5.50E-01	-2.86E-02	3.78E-01
4.50E-01	5.50E-01	-2.28E-02	3.79E-01
4.60E-01	5.50E-01	-1.69E-02	3.81E-01
4.70E-01	5.50E-01	-1.09E-02	3.82E-01
4.80E-01	5.50E-01	-4.81E-03	3.84E-01
4.90E-01	5.50E-01	1.37E-03	3.85E-01
5.00E-01	5.50E-01	7.64E-03	3.87E-01
5.10E-01	5.50E-01	1.40E-02	3.89E-01
5.20E-01	5.50E-01	2.05E-02	3.90E-01
5.30E-01	5.50E-01	2.71E-02	3.92E-01
5.40E-01	5.50E-01	3.38E-02	3.94E-01
5.50E-01	5.50E-01	4.05E-02	3.95E-01
5.60E-01	5.50E-01	4.74E-02	3.97E-01
5.70E-01	5.50E-01	5.45E-02	3.99E-01
5.80E-01	5.50E-01	6.16E-02	4.01E-01
5.90E-01	5.50E-01	6.88E-02	4.03E-01
6.00E-01	5.50E-01	7.62E-02	4.05E-01
6.10E-01	5.50E-01	8.37E-02	4.07E-01
6.20E-01	5.50E-01	9.14E-02	4.09E-01
6.30E-01	5.50E-01	9.91E-02	4.11E-01
6.40E-01	5.50E-01	1.07E-01	4.13E-01
6.50E-01	5.50E-01	1.15E-01	4.15E-01
6.60E-01	5.50E-01	1.23E-01	4.17E-01
6.70E-01	5.50E-01	1.32E-01	4.19E-01
6.80E-01	5.50E-01	1.40E-01	4.21E-01
6.90E-01	5.50E-01	1.49E-01	4.24E-01
7.00E-01	5.50E-01	1.58E-01	4.26E-01
7.10E-01	5.50E-01	1.67E-01	4.28E-01
7.20E-01	5.50E-01	1.76E-01	4.31E-01
7.30E-01	5.50E-01	1.85E-01	4.33E-01
7.40E-01	5.50E-01	1.95E-01	4.36E-01
7.50E-01	5.50E-01	2.04E-01	4.38E-01
7.60E-01	5.50E-01	2.14E-01	4.41E-01
7.70E-01	5.50E-01	2.24E-01	4.44E-01
7.80E-01	5.50E-01	2.35E-01	4.47E-01
7.90E-01	5.50E-01	2.45E-01	4.49E-01
8.00E-01	5.50E-01	2.56E-01	4.52E-01
8.10E-01	5.50E-01	2.67E-01	4.56E-01
8.20E-01	5.50E-01	2.78E-01	4.59E-01
8.30E-01	5.50E-01	2.90E-01	4.62E-01
8.40E-01	5.50E-01	3.02E-01	4.65E-01
8.50E-01	5.50E-01	3.14E-01	4.69E-01
8.60E-01	5.50E-01	3.26E-01	4.72E-01
8.70E-01	5.50E-01	3.39E-01	4.76E-01
8.80E-01	5.50E-01	3.52E-01	4.80E-01
8.90E-01	5.50E-01	3.65E-01	4.84E-01
9.00E-01	5.50E-01	3.79E-01	4.88E-01
9.10E-01	5.50E-01	3.93E-01	4.92E-01
9.20E-01	5.50E-01	4.08E-01	4.97E-01
9.30E-01	5.50E-01	4.23E-01	5.02E-01
9.40E-01	5.50E-01	4.38E-01	5.07E-01
9.50E-01	5.50E-01	4.54E-01	5.12E-01
9.60E-01	5.50E-01	4.71E-01	5.18E-01
9.70E-01	5.50E-01	4.89E-01	5.24E-01
9.80E-01	5.50E-01	5.07E-01	5.31E-01
9.90E-01	5.50E-01	5.27E-01	5.39E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	5.60E-01	-2.23E-01	3.37E-01
1.00E-02	5.60E-01	-2.20E-01	3.38E-01
2.00E-02	5.60E-01	-2.17E-01	3.38E-01
3.00E-02	5.60E-01	-2.13E-01	3.39E-01
4.00E-02	5.60E-01	-2.10E-01	3.40E-01
5.00E-02	5.60E-01	-2.06E-01	3.41E-01
6.00E-02	5.60E-01	-2.03E-01	3.42E-01
7.00E-02	5.60E-01	-1.99E-01	3.43E-01
8.00E-02	5.60E-01	-1.95E-01	3.44E-01
9.00E-02	5.60E-01	-1.92E-01	3.45E-01
1.00E-01	5.60E-01	-1.88E-01	3.46E-01
1.10E-01	5.60E-01	-1.84E-01	3.47E-01
1.20E-01	5.60E-01	-1.81E-01	3.48E-01
1.30E-01	5.60E-01	-1.77E-01	3.49E-01
1.40E-01	5.60E-01	-1.73E-01	3.50E-01
1.50E-01	5.60E-01	-1.69E-01	3.51E-01
1.60E-01	5.60E-01	-1.65E-01	3.52E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	5.70E-01	-2.26E-01	3.44E-01
1.00E-02	5.70E-01	-2.22E-01	3.45E-01
2.00E-02	5.70E-01	-2.19E-01	3.46E-01
3.00E-02	5.70E-01	-2.16E-01	3.47E-01
4.00E-02	5.70E-01	-2.12E-01	3.48E-01
5.00E-02	5.70E-01	-2.09E-01	3.49E-01
6.00E-02	5.70E-01	-2.05E-01	3.50E-01
7.00E-02	5.70E-01	-2.01E-01	3.51E-01
8.00E-02	5.70E-01	-1.98E-01	3.52E-01
9.00E-02	5.70E-01	-1.94E-01	3.53E-01
1.00E-01	5.70E-01	-1.90E-01	3.54E-01
1.10E-01	5.70E-01	-1.86E-01	3.55E-01
1.20E-01	5.70E-01	-1.83E-01	3.56E-01
1.30E-01	5.70E-01	-1.79E-01	3.57E-01
1.40E-01	5.70E-01	-1.75E-01	3.58E-01
1.50E-01	5.70E-01	-1.71E-01	3.59E-01
1.60E-01	5.70E-01	-1.67E-01	3.60E-01
1.70E-01	5.70E-01	-1.63E-01	3.61E-01
1.80E-01	5.70E-01	-1.59E-01	3.62E-01
1.90E-01	5.70E-01	-1.55E-01	3.63E-01
2.00E-01	5.70E-01	-1.50E-01	3.64E-01
2.10E-01	5.70E-01	-1.46E-01	3.65E-01
2.20E-01	5.70E-01	-1.42E-01	3.67E-01
2.30E-01	5.70E-01	-1.37E-01	3.68E-01
2.40E-01	5.70E-01	-1.33E-01	3.69E-01
2.50E-01	5.70E-01	-1.28E-01	3.70E-01
2.60E-01	5.70E-01	-1.24E-01	3.71E-01
2.70E-01	5.70E-01	-1.19E-01	3.73E-01
2.80E-01	5.70E-01	-1.15E-01	3.74E-01
2.90E-01	5.70E-01	-1.10E-01	3.75E-01
3.00E-01	5.70E-01	-1.05E-01	3.76E-01
3.10E-01	5.70E-01	-1.00E-01	3.78E-01
3.20E-01	5.70E-01	-9.52E-02	3.79E-01
3.30E-01	5.70E-01	-9.02E-02	3.80E-01
3.40E-01	5.70E-01	-8.51E-02	3.82E-01
3.50E-01	5.70E-01	-8.00E-02	3.83E-01
3.60E-01	5.70E-01	-7.47E-02	3.84E-01
3.70E-01	5.70E-01	-6.94E-02	3.86E-01
3.80E-01	5.70E-01	-6.41E-02	3.87E-01
3.90E-01	5.70E-01	-5.86E-02	3.88E-01
4.00E-01	5.70E-01	-5.31E-02	3.90E-01
4.10E-01	5.70E-01	-4.75E-02	3.91E-01
4.20E-01	5.70E-01	-4.18E-02	3.93E-01
4.30E-01	5.70E-01	-3.60E-02	3.94E-01
4.40E-01	5.70E-01	-3.01E-02	3.96E-01
4.50E-01	5.70E-01	-2.42E-02	3.97E-01
4.60E-01	5.70E-01	-1.81E-02	3.99E-01
4.70E-01	5.70E-01	-1.20E-02	4.01E-01
4.80E-01	5.70E-01	-5.77E-03	4.02E-01
4.90E-01	5.70E-01	5.68E-04	4.04E-01
5.00E-01	5.70E-01	7.00E-03	4.06E-01
5.10E-01	5.70E-01	1.35E-02	4.07E-01
5.20E-01	5.70E-01	2.02E-02	4.09E-01
5.30E-01	5.70E-01	2.69E-02	4.11E-01
5.40E-01	5.70E-01	3.38E-02	4.13E-01
5.50E-01	5.70E-01	4.08E-02	4.14E-01
5.60E-01	5.70E-01	4.79E-02	4.16E-01
5.70E-01	5.70E-01	5.51E-02	4.18E-01
5.80E-01	5.70E-01	6.24E-02	4.20E-01
5.90E-01	5.70E-01	6.99E-02	4.22E-01
6.00E-01	5.70E-01	7.75E-02	4.24E-01
6.10E-01	5.70E-01	8.52E-02	4.26E-01
6.20E-01	5.70E-01	9.31E-02	4.28E-01
6.30E-01	5.70E-01	1.01E-01	4.30E-01
6.40E-01	5.70E-01	1.09E-01	4.32E-01
6.50E-01	5.70E-01	1.18E-01	4.34E-01
6.60E-01	5.70E-01	1.26E-01	4.37E-01
6.70E-01	5.70E-01	1.35E-01	4.39E-01
6.80E-01	5.70E-01	1.43E-01	4.41E-01
6.90E-01	5.70E-01	1.52E-01	4.44E-01
7.00E-01	5.70E-01	1.61E-01	4.46E-01
7.10E-01	5.70E-01	1.71E-01	4.48E-01
7.20E-01	5.70E-01	1.80E-01	4.51E-01
7.30E-01	5.70E-01	1.90E-01	4.53E-01
7.40E-01	5.70E-01	2.00E-01	4.56E-01
7.50E-01	5.70E-01	2.10E-01	4.59E-01
7.60E-01	5.70E-01	2.20E-01	4.61E-01
7.70E-01	5.70E-01	2.31E-01	4.64E-01
7.80E-01	5.70E-01	2.41E-01	4.67E-01
7.90E-01	5.70E-01	2.52E-01	4.70E-01
8.00E-01	5.70E-01	2.64E-01	4.73E-01
8.10E-01	5.70E-01	2.75E-01	4.76E-01
8.20E-01	5.70E-01	2.87E-01	4.79E-01
8.30E-01	5.70E-01	2.99E-01	4.83E-01
8.40E-01	5.70E-01	3.11E-01	4.86E-01
8.50E-01	5.70E-01	3.24E-01	4.90E-01
8.60E-01	5.70E-01	3.37E-01	4.93E-01
8.70E-01	5.70E-01	3.50E-01	4.97E-01
8.80E-01	5.70E-01	3.64E-01	5.01E-01
8.90E-01	5.70E-01	3.77E-01	5.05E-01
9.00E-01	5.70E-01	3.92E-01	5.09E-01
9.10E-01	5.70E-01	4.07E-01	5.13E-01
9.20E-01	5.70E-01	4.22E-01	5.18E-01
9.30E-01	5.70E-01	4.38E-01	5.23E-01
9.40E-01	5.70E-01	4.54E-01	5.28E-01
9.50E-01	5.70E-01	4.71E-01	5.33E-01
9.60E-01	5.70E-01	4.88E-01	5.39E-01
9.70E-01	5.70E-01	5.06E-01	5.45E-01
9.80E-01	5.70E-01	5.26E-01	5.52E-01
9.90E-01	5.70E-01	5.46E-01	5.59E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	5.80E-01	-2.28E-01	3.52E-01
1.00E-02	5.80E-01	-2.25E-01	3.53E-01
2.00E-02	5.80E-01	-2.21E-01	3.54E-01
3.00E-02	5.80E-01	-2.18E-01	3.55E-01
4.00E-02	5.80E-01	-2.14E-01	3.56E-01
5.00E-02	5.80E-01	-2.11E-01	3.57E-01
6.00E-02	5.80E-01	-2.07E-01	3.58E-01
7.00E-02	5.80E-01	-2.04E-01	3.59E-01
8.00E-02	5.80E-01	-2.00E-01	3.60E-01
9.00E-02	5.80E-01	-1.96E-01	3.61E-01
1.00E-01	5.80E-01	-1.92E-01	3.62E-01
1.10E-01	5.80E-01	-1.89E-01	3.63E-01
1.20E-01	5.80E-01	-1.85E-01	3.64E-01
1.30E-01	5.80E-01	-1.81E-01	3.65E-01
1.40E-01	5.80E-01	-1.77E-01	3.66E-01
1.50E-01	5.80E-01	-1.73E-01	3.67E-01
1.60E-01	5.80E-01	-1.69E-01	3.68E-01
1.70E-01	5.80E-01	-1.65E-01	3.69E-01
1.80E-01	5.80E-01	-1.61E-01	3.70E-01
1.90E-01	5.80E-01	-1.56E-01	3.72E-01
2.00E-01	5.80E-01	-1.52E-01	3.73E-01
2.10E-01	5.80E-01	-1.48E-01	3.74E-01
2.20E-01	5.80E-01	-1.44E-01	3.75E-01
2.30E-01	5.80E-01	-1.39E-01	3.76E-01
2.40E-01	5.80E-01	-1.35E-01	3.77E-01
2.50E-01	5.80E-01	-1.30E-01	3.79E-01
2.60E-01	5.80E-01	-1.26E-01	3.80E-01
2.70E-01	5.80E-01	-1.21E-01	3.81E-01
2.80E-01	5.80E-01	-1.16E-01	3.82E-01
2.90E-01	5.80E-01	-1.11E-01	3.84E-01
3.00E-01	5.80E-01	-1.06E-01	3.85E-01
3.10E-01	5.80E-01	-1.02E-01	3.86E-01
3.20E-01	5.80E-01	-9.66E-02	3.88E-01
3.30E-01	5.80E-01	-9.16E-02	3.89E-01
3.40E-01	5.80E-01	-8.64E-02	3.90E-01
3.50E-01	5.80E-01	-8.12E-02	3.92E-01
3.60E-01	5.80E-01	-7.60E-02	3.93E-01
3.70E-01	5.80E-01	-7.06E-02	3.95E-01
3.80E-01	5.80E-01	-6.52E-02	3.96E-01
3.90E-01	5.80E-01	-5.97E-02	3.98E-01
4.00E-01	5.80E-01	-5.41E-02	3.99E-01
4.10E-01	5.80E-01	-4.84E-02	4.01E-01
4.20E-01	5.80E-01	-4.27E-02	4.02E-01
4.30E-01	5.80E-01	-3.69E-02	4.04E-01
4.40E-01	5.80E-01	-3.09E-02	4.05E-01
4.50E-01	5.80E-01	-2.49E-02	4.07E-01
4.60E-01	5.80E-01	-1.88E-02	4.08E-01
4.70E-01	5.80E-01	-1.26E-02	4.10E-01
4.80E-01	5.80E-01	-6.29E-03	4.12E-01
4.90E-01	5.80E-01	1.15E-04	4.13E-01
5.00E-01	5.80E-01	6.62E-03	4.15E-01
5.10E-01	5.80E-01	1.32E-02	4.17E-01
5.20E-01	5.80E-01	2.00E-02	4.19E-01
5.30E-01	5.80E-01	2.68E-02	4.20E-01
5.40E-01	5.80E-01	3.37E-02	4.22E-01
5.50E-01	5.80E-01	4.08E-02	4.24E-01
5.60E-01	5.80E-01	4.80E-02	4.26E-01
5.70E-01	5.80E-01	5.53E-02	4.28E-01
5.80E-01	5.80E-01	6.27E-02	4.30E-01
5.90E-01	5.80E-01	7.03E-02	4.32E-01
6.00E-01	5.80E-01	7.80E-02	4.34E-01
6.10E-01	5.80E-01	8.58E-02	4.36E-01
6.20E-01	5.80E-01	9.38E-02	4.38E-01
6.30E-01	5.80E-01	1.02E-01	4.40E-01
6.40E-01	5.80E-01	1.10E-01	4.42E-01
6.50E-01	5.80E-01	1.19E-01	4.44E-01
6.60E-01	5.80E-01	1.27E-01	4.47E-01
6.70E-01	5.80E-01	1.36E-01	4.49E-01
6.80E-01	5.80E-01	1.45E-01	4.51E-01
6.90E-01	5.80E-01	1.54E-01	4.54E-01
7.00E-01	5.80E-01	1.63E-01	4.56E-01
7.10E-01	5.80E-01	1.73E-01	4.59E-01
7.20E-01	5.80E-01	1.82E-01	4.61E-01
7.30E-01	5.80E-01	1.92E-01	4.64E-01
7.40E-01	5.80E-01	2.02E-01	4.66E-01
7.50E-01	5.80E-01	2.12E-01	4.69E-01
7.60E-01	5.80E-01	2.23E-01	4.72E-01
7.70E-01	5.80E-01	2.34E-01	4.75E-01
7.80E-01	5.80E-01	2.45E-01	4.78E-01
7.90E-01	5.80E-01	2.56E-01	4.80E-01
8.00E-01	5.80E-01	2.67E-01	4.84E-01
8.10E-01	5.80E-01	2.79E-01	4.87E-01
8.20E-01	5.80E-01	2.91E-01	4.90E-01
8.30E-01	5.80E-01	3.03E-01	4.93E-01
8.40E-01	5.80E-01	3.16E-01	4.97E-01
8.50E-01	5.80E-01	3.28E-01	5.00E-01
8.60E-01	5.80E-01	3.42E-01	5.04E-01
8.70E-01	5.80E-01	3.55E-01	5.07E-01
8.80E-01	5.80E-01	3.69E-01	5.11E-01
8.90E-01	5.80E-01	3.83E-01	5.15E-01
9.00E-01	5.80E-01	3.98E-01	5.19E-01
9.10E-01	5.80E-01	4.13E-01	5.24E-01
9.20E-01	5.80E-01	4.29E-01	5.28E-01
9.30E-01	5.80E-01	4.45E-01	5.33E-01
9.40E-01	5.80E-01	4.61E-01	5.38E-01
9.50E-01	5.80E-01	4.79E-01	5.43E-01
9.60E-01	5.80E-01	4.97E-01	5.49E-01
9.70E-01	5.80E-01	5.15E-01	5.55E-01
9.80E-01	5.80E-01	5.35E-01	5.62E-01
9.90E-01	5.80E-01	5.56E-01	5.70E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	5.90E-01	-2.30E-01	3.60E-01
1.00E-02	5.90E-01	-2.27E-01	3.61E-01
2.00E-02	5.90E-01	-2.23E-01	3.62E-01
3.00E-02	5.90E-01	-2.20E-01	3.63E-01
4.00E-02	5.90E-01	-2.16E-01	3.64E-01
5.00E-02	5.90E-01	-2.13E-01	3.65E-01
6.00E-02	5.90E-01	-2.09E-01	3.66E-01
7.00E-02	5.90E-01	-2.06E-01	3.67E-01
8.00E-02	5.90E-01	-2.02E-01	3.68E-01
9.00E-02	5.90E-01	-1.98E-01	3.69E-01
1.00E-01	5.90E-01	-1.94E-01	3.70E-01
1.10E-01	5.90E-01	-1.91E-01	3.71E-01
1.20E-01	5.90E-01	-1.87E-01	3.72E-0

α	β	$\Phi(\alpha,\beta)$	τ
0.00E+00	6.00E-01	-2.32E-01	3.68E-01
1.00E-02	6.00E-01	-2.29E-01	3.69E-01
2.00E-02	6.00E-01	-2.26E-01	3.70E-01
3.00E-02	6.00E-01	-2.22E-01	3.71E-01
4.00E-02	6.00E-01	-2.19E-01	3.72E-01
5.00E-02	6.00E-01	-2.15E-01	3.73E-01
6.00E-02	6.00E-01	-2.11E-01	3.74E-01
7.00E-02	6.00E-01	-2.08E-01	3.75E-01
8.00E-02	6.00E-01	-2.04E-01	3.76E-01
9.00E-02	6.00E-01	-2.00E-01	3.77E-01
1.00E-01	6.00E-01	-1.96E-01	3.78E-01
1.10E-01	6.00E-01	-1.93E-01	3.79E-01
1.20E-01	6.00E-01	-1.89E-01	3.80E-01
1.30E-01	6.00E-01	-1.85E-01	3.81E-01
1.40E-01	6.00E-01	-1.81E-01	3.83E-01
1.50E-01	6.00E-01	-1.77E-01	3.84E-01
1.60E-01	6.00E-01	-1.73E-01	3.85E-01
1.70E-01	6.00E-01	-1.68E-01	3.86E-01
1.80E-01	6.00E-01	-1.64E-01	3.87E-01
1.90E-01	6.00E-01	-1.60E-01	3.89E-01
2.00E-01	6.00E-01	-1.56E-01	3.90E-01
2.10E-01	6.00E-01	-1.51E-01	3.91E-01
2.20E-01	6.00E-01	-1.47E-01	3.92E-01
2.30E-01	6.00E-01	-1.42E-01	3.93E-01
2.40E-01	6.00E-01	-1.38E-01	3.95E-01
2.50E-01	6.00E-01	-1.33E-01	3.96E-01
2.60E-01	6.00E-01	-1.29E-01	3.97E-01
2.70E-01	6.00E-01	-1.24E-01	3.99E-01
2.80E-01	6.00E-01	-1.19E-01	4.00E-01
2.90E-01	6.00E-01	-1.14E-01	4.01E-01
3.00E-01	6.00E-01	-1.09E-01	4.03E-01
3.10E-01	6.00E-01	-1.04E-01	4.04E-01
3.20E-01	6.00E-01	-9.94E-02	4.06E-01
3.30E-01	6.00E-01	-9.42E-02	4.07E-01
3.40E-01	6.00E-01	-8.90E-02	4.08E-01
3.50E-01	6.00E-01	-8.37E-02	4.10E-01
3.60E-01	6.00E-01	-7.84E-02	4.11E-01
3.70E-01	6.00E-01	-7.30E-02	4.13E-01
3.80E-01	6.00E-01	-6.74E-02	4.14E-01
3.90E-01	6.00E-01	-6.18E-02	4.16E-01
4.00E-01	6.00E-01	-5.62E-02	4.18E-01
4.10E-01	6.00E-01	-5.04E-02	4.19E-01
4.20E-01	6.00E-01	-4.45E-02	4.21E-01
4.30E-01	6.00E-01	-3.86E-02	4.22E-01
4.40E-01	6.00E-01	-3.26E-02	4.24E-01
4.50E-01	6.00E-01	-2.64E-02	4.26E-01
4.60E-01	6.00E-01	-2.02E-02	4.27E-01
4.70E-01	6.00E-01	-1.39E-02	4.29E-01
4.80E-01	6.00E-01	-7.44E-03	4.31E-01
4.90E-01	6.00E-01	-9.00E-04	4.33E-01
5.00E-01	6.00E-01	5.74E-03	4.34E-01
5.10E-01	6.00E-01	1.25E-02	4.36E-01
5.20E-01	6.00E-01	1.94E-02	4.38E-01
5.30E-01	6.00E-01	2.63E-02	4.40E-01
5.40E-01	6.00E-01	3.34E-02	4.42E-01
5.50E-01	6.00E-01	4.07E-02	4.44E-01
5.60E-01	6.00E-01	4.80E-02	4.46E-01
5.70E-01	6.00E-01	5.55E-02	4.48E-01
5.80E-01	6.00E-01	6.31E-02	4.50E-01
5.90E-01	6.00E-01	7.09E-02	4.52E-01
6.00E-01	6.00E-01	7.87E-02	4.54E-01
6.10E-01	6.00E-01	8.68E-02	4.56E-01
6.20E-01	6.00E-01	9.50E-02	4.58E-01
6.30E-01	6.00E-01	1.03E-01	4.60E-01
6.40E-01	6.00E-01	1.12E-01	4.62E-01
6.50E-01	6.00E-01	1.20E-01	4.65E-01
6.60E-01	6.00E-01	1.29E-01	4.67E-01
6.70E-01	6.00E-01	1.38E-01	4.69E-01
6.80E-01	6.00E-01	1.47E-01	4.72E-01
6.90E-01	6.00E-01	1.57E-01	4.74E-01
7.00E-01	6.00E-01	1.66E-01	4.77E-01
7.10E-01	6.00E-01	1.76E-01	4.79E-01
7.20E-01	6.00E-01	1.86E-01	4.82E-01
7.30E-01	6.00E-01	1.96E-01	4.84E-01
7.40E-01	6.00E-01	2.07E-01	4.87E-01
7.50E-01	6.00E-01	2.17E-01	4.90E-01
7.60E-01	6.00E-01	2.28E-01	4.93E-01
7.70E-01	6.00E-01	2.39E-01	4.96E-01
7.80E-01	6.00E-01	2.50E-01	4.98E-01
7.90E-01	6.00E-01	2.62E-01	5.01E-01
8.00E-01	6.00E-01	2.74E-01	5.05E-01
8.10E-01	6.00E-01	2.86E-01	5.08E-01
8.20E-01	6.00E-01	2.98E-01	5.11E-01
8.30E-01	6.00E-01	3.11E-01	5.14E-01
8.40E-01	6.00E-01	3.24E-01	5.18E-01
8.50E-01	6.00E-01	3.38E-01	5.21E-01
8.60E-01	6.00E-01	3.51E-01	5.25E-01
8.70E-01	6.00E-01	3.65E-01	5.29E-01
8.80E-01	6.00E-01	3.80E-01	5.32E-01
8.90E-01	6.00E-01	3.95E-01	5.36E-01
9.00E-01	6.00E-01	4.10E-01	5.41E-01
9.10E-01	6.00E-01	4.26E-01	5.45E-01
9.20E-01	6.00E-01	4.42E-01	5.49E-01
9.30E-01	6.00E-01	4.59E-01	5.54E-01
9.40E-01	6.00E-01	4.76E-01	5.59E-01
9.50E-01	6.00E-01	4.94E-01	5.64E-01
9.60E-01	6.00E-01	5.13E-01	5.70E-01
9.70E-01	6.00E-01	5.33E-01	5.76E-01
9.80E-01	6.00E-01	5.53E-01	5.82E-01
9.90E-01	6.00E-01	5.75E-01	5.90E-01

α	β	$\Phi(\alpha,\beta)$	τ
0.00E+00	6.10E-01	-2.34E-01	3.76E-01
1.00E-02	6.10E-01	-2.31E-01	3.77E-01
2.00E-02	6.10E-01	-2.28E-01	3.78E-01
3.00E-02	6.10E-01	-2.24E-01	3.79E-01
4.00E-02	6.10E-01	-2.21E-01	3.80E-01
5.00E-02	6.10E-01	-2.17E-01	3.81E-01
6.00E-02	6.10E-01	-2.13E-01	3.82E-01
7.00E-02	6.10E-01	-2.10E-01	3.83E-01
8.00E-02	6.10E-01	-2.06E-01	3.84E-01
9.00E-02	6.10E-01	-2.02E-01	3.85E-01
1.00E-01	6.10E-01	-1.98E-01	3.86E-01
1.10E-01	6.10E-01	-1.94E-01	3.88E-01
1.20E-01	6.10E-01	-1.91E-01	3.89E-01
1.30E-01	6.10E-01	-1.87E-01	3.90E-01
1.40E-01	6.10E-01	-1.83E-01	3.91E-01
1.50E-01	6.10E-01	-1.78E-01	3.92E-01
1.60E-01	6.10E-01	-1.74E-01	3.93E-01
1.70E-01	6.10E-01	-1.70E-01	3.95E-01
1.80E-01	6.10E-01	-1.66E-01	3.96E-01
1.90E-01	6.10E-01	-1.62E-01	3.97E-01
2.00E-01	6.10E-01	-1.57E-01	3.98E-01
2.10E-01	6.10E-01	-1.53E-01	4.00E-01
2.20E-01	6.10E-01	-1.49E-01	4.01E-01
2.30E-01	6.10E-01	-1.44E-01	4.02E-01
2.40E-01	6.10E-01	-1.40E-01	4.04E-01
2.50E-01	6.10E-01	-1.35E-01	4.05E-01
2.60E-01	6.10E-01	-1.30E-01	4.06E-01
2.70E-01	6.10E-01	-1.25E-01	4.08E-01
2.80E-01	6.10E-01	-1.21E-01	4.09E-01
2.90E-01	6.10E-01	-1.16E-01	4.10E-01
3.00E-01	6.10E-01	-1.11E-01	4.12E-01
3.10E-01	6.10E-01	-1.06E-01	4.13E-01
3.20E-01	6.10E-01	-1.01E-01	4.15E-01
3.30E-01	6.10E-01	-9.55E-02	4.16E-01
3.40E-01	6.10E-01	-9.03E-02	4.18E-01
3.50E-01	6.10E-01	-8.50E-02	4.19E-01
3.60E-01	6.10E-01	-7.96E-02	4.21E-01
3.70E-01	6.10E-01	-7.41E-02	4.22E-01
3.80E-01	6.10E-01	-6.86E-02	4.24E-01
3.90E-01	6.10E-01	-6.29E-02	4.25E-01
4.00E-01	6.10E-01	-5.72E-02	4.27E-01
4.10E-01	6.10E-01	-5.14E-02	4.29E-01
4.20E-01	6.10E-01	-4.55E-02	4.30E-01
4.30E-01	6.10E-01	-3.95E-02	4.32E-01
4.40E-01	6.10E-01	-3.34E-02	4.34E-01
4.50E-01	6.10E-01	-2.72E-02	4.35E-01
4.60E-01	6.10E-01	-2.09E-02	4.37E-01
4.70E-01	6.10E-01	-1.45E-02	4.39E-01
4.80E-01	6.10E-01	-8.06E-03	4.40E-01
4.90E-01	6.10E-01	-1.46E-03	4.42E-01
5.00E-01	6.10E-01	5.24E-03	4.44E-01
5.10E-01	6.10E-01	1.21E-02	4.46E-01
5.20E-01	6.10E-01	1.90E-02	4.48E-01
5.30E-01	6.10E-01	2.60E-02	4.50E-01
5.40E-01	6.10E-01	3.32E-02	4.52E-01
5.50E-01	6.10E-01	4.05E-02	4.54E-01
5.60E-01	6.10E-01	4.79E-02	4.56E-01
5.70E-01	6.10E-01	5.55E-02	4.58E-01
5.80E-01	6.10E-01	6.32E-02	4.60E-01
5.90E-01	6.10E-01	7.10E-02	4.62E-01
6.00E-01	6.10E-01	7.90E-02	4.64E-01
6.10E-01	6.10E-01	8.71E-02	4.66E-01
6.20E-01	6.10E-01	9.54E-02	4.68E-01
6.30E-01	6.10E-01	1.04E-01	4.70E-01
6.40E-01	6.10E-01	1.12E-01	4.73E-01
6.50E-01	6.10E-01	1.21E-01	4.75E-01
6.60E-01	6.10E-01	1.30E-01	4.77E-01
6.70E-01	6.10E-01	1.39E-01	4.80E-01
6.80E-01	6.10E-01	1.49E-01	4.82E-01
6.90E-01	6.10E-01	1.58E-01	4.85E-01
7.00E-01	6.10E-01	1.68E-01	4.87E-01
7.10E-01	6.10E-01	1.78E-01	4.90E-01
7.20E-01	6.10E-01	1.88E-01	4.92E-01
7.30E-01	6.10E-01	1.98E-01	4.95E-01
7.40E-01	6.10E-01	2.08E-01	4.98E-01
7.50E-01	6.10E-01	2.19E-01	5.00E-01
7.60E-01	6.10E-01	2.30E-01	5.03E-01
7.70E-01	6.10E-01	2.42E-01	5.06E-01
7.80E-01	6.10E-01	2.53E-01	5.09E-01
7.90E-01	6.10E-01	2.65E-01	5.12E-01
8.00E-01	6.10E-01	2.77E-01	5.15E-01
8.10E-01	6.10E-01	2.89E-01	5.18E-01
8.20E-01	6.10E-01	3.02E-01	5.22E-01
8.30E-01	6.10E-01	3.15E-01	5.25E-01
8.40E-01	6.10E-01	3.28E-01	5.28E-01
8.50E-01	6.10E-01	3.42E-01	5.32E-01
8.60E-01	6.10E-01	3.56E-01	5.35E-01
8.70E-01	6.10E-01	3.70E-01	5.39E-01
8.80E-01	6.10E-01	3.85E-01	5.43E-01
8.90E-01	6.10E-01	4.00E-01	5.47E-01
9.00E-01	6.10E-01	4.16E-01	5.51E-01
9.10E-01	6.10E-01	4.32E-01	5.55E-01
9.20E-01	6.10E-01	4.49E-01	5.60E-01
9.30E-01	6.10E-01	4.66E-01	5.65E-01
9.40E-01	6.10E-01	4.84E-01	5.69E-01
9.50E-01	6.10E-01	5.02E-01	5.75E-01
9.60E-01	6.10E-01	5.21E-01	5.80E-01
9.70E-01	6.10E-01	5.41E-01	5.86E-01
9.80E-01	6.10E-01	5.62E-01	5.93E-01
9.90E-01	6.10E-01	5.85E-01	6.00E-01

α	β	$\Phi(\alpha,\beta)$	τ
0.00E+00	6.20E-01	-2.36E-01	3.84E-01
1.00E-02	6.20E-01	-2.33E-01	3.85E-01
2.00E-02	6.20E-01	-2.30E-01	3.86E-01
3.00E-02	6.20E-01	-2.26E-01	3.87E-01
4.00E-02	6.20E-01	-2.22E-01	3.88E-01
5.00E-02	6.20E-01	-2.19E-01	3.89E-01
6.00E-02	6.20E-01	-2.15E-01	3.90E-01
7.00E-02	6.20E-01	-2.11E-01	3.91E-01
8.00E-02	6.20E-01	-2.08E-01	3.92E-01
9.00E-02	6.20E-01	-2.04E-01	3.94E-01
1.00E-01	6.20E-01	-2.00E-01	3.95E-01
1.10E-01	6.20E-01	-1.96E-01	3.96E-01
1.20E-01	6.20E-01	-1.92E-01	3.97E

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	6.30E-01	-2.38E-01	3.92E-01
1.00E-02	6.30E-01	-2.35E-01	3.93E-01
2.00E-02	6.30E-01	-2.31E-01	3.94E-01
3.00E-02	6.30E-01	-2.28E-01	3.95E-01
4.00E-02	6.30E-01	-2.24E-01	3.96E-01
5.00E-02	6.30E-01	-2.21E-01	3.97E-01
6.00E-02	6.30E-01	-2.17E-01	3.99E-01
7.00E-02	6.30E-01	-2.13E-01	4.00E-01
8.00E-02	6.30E-01	-2.09E-01	4.01E-01
9.00E-02	6.30E-01	-2.06E-01	4.02E-01
1.00E-01	6.30E-01	-2.02E-01	4.03E-01
1.10E-01	6.30E-01	-1.98E-01	4.05E-01
1.20E-01	6.30E-01	-1.94E-01	4.06E-01
1.30E-01	6.30E-01	-1.90E-01	4.07E-01
1.40E-01	6.30E-01	-1.86E-01	4.08E-01
1.50E-01	6.30E-01	-1.82E-01	4.10E-01
1.60E-01	6.30E-01	-1.78E-01	4.11E-01
1.70E-01	6.30E-01	-1.73E-01	4.12E-01
1.80E-01	6.30E-01	-1.69E-01	4.13E-01
1.90E-01	6.30E-01	-1.65E-01	4.15E-01
2.00E-01	6.30E-01	-1.61E-01	4.16E-01
2.10E-01	6.30E-01	-1.56E-01	4.17E-01
2.20E-01	6.30E-01	-1.52E-01	4.19E-01
2.30E-01	6.30E-01	-1.47E-01	4.20E-01
2.40E-01	6.30E-01	-1.42E-01	4.22E-01
2.50E-01	6.30E-01	-1.38E-01	4.23E-01
2.60E-01	6.30E-01	-1.33E-01	4.24E-01
2.70E-01	6.30E-01	-1.28E-01	4.26E-01
2.80E-01	6.30E-01	-1.23E-01	4.27E-01
2.90E-01	6.30E-01	-1.18E-01	4.29E-01
3.00E-01	6.30E-01	-1.13E-01	4.30E-01
3.10E-01	6.30E-01	-1.08E-01	4.32E-01
3.20E-01	6.30E-01	-1.03E-01	4.33E-01
3.30E-01	6.30E-01	-9.80E-02	4.35E-01
3.40E-01	6.30E-01	-9.28E-02	4.36E-01
3.50E-01	6.30E-01	-8.74E-02	4.38E-01
3.60E-01	6.30E-01	-8.19E-02	4.40E-01
3.70E-01	6.30E-01	-7.64E-02	4.41E-01
3.80E-01	6.30E-01	-7.08E-02	4.43E-01
3.90E-01	6.30E-01	-6.50E-02	4.44E-01
4.00E-01	6.30E-01	-5.92E-02	4.46E-01
4.10E-01	6.30E-01	-5.34E-02	4.48E-01
4.20E-01	6.30E-01	-4.74E-02	4.49E-01
4.30E-01	6.30E-01	-4.13E-02	4.51E-01
4.40E-01	6.30E-01	-3.51E-02	4.53E-01
4.50E-01	6.30E-01	-2.89E-02	4.55E-01
4.60E-01	6.30E-01	-2.25E-02	4.57E-01
4.70E-01	6.30E-01	-1.60E-02	4.58E-01
4.80E-01	6.30E-01	-9.41E-03	4.60E-01
4.90E-01	6.30E-01	-2.71E-03	4.62E-01
5.00E-01	6.30E-01	4.10E-03	4.64E-01
5.10E-01	6.30E-01	1.10E-02	4.66E-01
5.20E-01	6.30E-01	1.81E-02	4.68E-01
5.30E-01	6.30E-01	2.53E-02	4.70E-01
5.40E-01	6.30E-01	3.26E-02	4.72E-01
5.50E-01	6.30E-01	4.00E-02	4.74E-01
5.60E-01	6.30E-01	4.75E-02	4.76E-01
5.70E-01	6.30E-01	5.52E-02	4.78E-01
5.80E-01	6.30E-01	6.31E-02	4.80E-01
5.90E-01	6.30E-01	7.11E-02	4.82E-01
6.00E-01	6.30E-01	7.92E-02	4.84E-01
6.10E-01	6.30E-01	8.75E-02	4.87E-01
6.20E-01	6.30E-01	9.60E-02	4.89E-01
6.30E-01	6.30E-01	1.05E-01	4.91E-01
6.40E-01	6.30E-01	1.13E-01	4.93E-01
6.50E-01	6.30E-01	1.22E-01	4.96E-01
6.60E-01	6.30E-01	1.31E-01	4.98E-01
6.70E-01	6.30E-01	1.41E-01	5.01E-01
6.80E-01	6.30E-01	1.50E-01	5.03E-01
6.90E-01	6.30E-01	1.60E-01	5.06E-01
7.00E-01	6.30E-01	1.70E-01	5.08E-01
7.10E-01	6.30E-01	1.80E-01	5.11E-01
7.20E-01	6.30E-01	1.91E-01	5.13E-01
7.30E-01	6.30E-01	2.01E-01	5.16E-01
7.40E-01	6.30E-01	2.12E-01	5.19E-01
7.50E-01	6.30E-01	2.23E-01	5.22E-01
7.60E-01	6.30E-01	2.34E-01	5.24E-01
7.70E-01	6.30E-01	2.46E-01	5.27E-01
7.80E-01	6.30E-01	2.58E-01	5.30E-01
7.90E-01	6.30E-01	2.70E-01	5.33E-01
8.00E-01	6.30E-01	2.82E-01	5.37E-01
8.10E-01	6.30E-01	2.95E-01	5.40E-01
8.20E-01	6.30E-01	3.08E-01	5.43E-01
8.30E-01	6.30E-01	3.22E-01	5.46E-01
8.40E-01	6.30E-01	3.36E-01	5.50E-01
8.50E-01	6.30E-01	3.50E-01	5.53E-01
8.60E-01	6.30E-01	3.64E-01	5.57E-01
8.70E-01	6.30E-01	3.79E-01	5.61E-01
8.80E-01	6.30E-01	3.95E-01	5.64E-01
8.90E-01	6.30E-01	4.11E-01	5.68E-01
9.00E-01	6.30E-01	4.27E-01	5.72E-01
9.10E-01	6.30E-01	4.44E-01	5.77E-01
9.20E-01	6.30E-01	4.61E-01	5.81E-01
9.30E-01	6.30E-01	4.79E-01	5.86E-01
9.40E-01	6.30E-01	4.98E-01	5.91E-01
9.50E-01	6.30E-01	5.17E-01	5.96E-01
9.60E-01	6.30E-01	5.37E-01	6.01E-01
9.70E-01	6.30E-01	5.58E-01	6.07E-01
9.80E-01	6.30E-01	5.80E-01	6.13E-01
9.90E-01	6.30E-01	6.04E-01	6.20E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	6.40E-01	-2.40E-01	4.00E-01
1.00E-02	6.40E-01	-2.37E-01	4.01E-01
2.00E-02	6.40E-01	-2.33E-01	4.02E-01
3.00E-02	6.40E-01	-2.29E-01	4.03E-01
4.00E-02	6.40E-01	-2.26E-01	4.05E-01
5.00E-02	6.40E-01	-2.22E-01	4.06E-01
6.00E-02	6.40E-01	-2.19E-01	4.07E-01
7.00E-02	6.40E-01	-2.15E-01	4.08E-01
8.00E-02	6.40E-01	-2.11E-01	4.09E-01
9.00E-02	6.40E-01	-2.07E-01	4.11E-01
1.00E-01	6.40E-01	-2.03E-01	4.12E-01
1.10E-01	6.40E-01	-1.99E-01	4.13E-01
1.20E-01	6.40E-01	-1.96E-01	4.15E-01
1.30E-01	6.40E-01	-1.92E-01	4.16E-01
1.40E-01	6.40E-01	-1.87E-01	4.17E-01
1.50E-01	6.40E-01	-1.83E-01	4.18E-01
1.60E-01	6.40E-01	-1.79E-01	4.20E-01
1.70E-01	6.40E-01	-1.75E-01	4.21E-01
1.80E-01	6.40E-01	-1.71E-01	4.22E-01
1.90E-01	6.40E-01	-1.66E-01	4.24E-01
2.00E-01	6.40E-01	-1.62E-01	4.25E-01
2.10E-01	6.40E-01	-1.58E-01	4.27E-01
2.20E-01	6.40E-01	-1.53E-01	4.28E-01
2.30E-01	6.40E-01	-1.49E-01	4.29E-01
2.40E-01	6.40E-01	-1.44E-01	4.31E-01
2.50E-01	6.40E-01	-1.39E-01	4.32E-01
2.60E-01	6.40E-01	-1.34E-01	4.34E-01
2.70E-01	6.40E-01	-1.30E-01	4.35E-01
2.80E-01	6.40E-01	-1.25E-01	4.37E-01
2.90E-01	6.40E-01	-1.20E-01	4.38E-01
3.00E-01	6.40E-01	-1.15E-01	4.40E-01
3.10E-01	6.40E-01	-1.10E-01	4.41E-01
3.20E-01	6.40E-01	-1.05E-01	4.43E-01
3.30E-01	6.40E-01	-9.93E-02	4.44E-01
3.40E-01	6.40E-01	-9.39E-02	4.46E-01
3.50E-01	6.40E-01	-8.85E-02	4.48E-01
3.60E-01	6.40E-01	-8.31E-02	4.49E-01
3.70E-01	6.40E-01	-7.75E-02	4.51E-01
3.80E-01	6.40E-01	-7.18E-02	4.52E-01
3.90E-01	6.40E-01	-6.61E-02	4.54E-01
4.00E-01	6.40E-01	-6.03E-02	4.56E-01
4.10E-01	6.40E-01	-5.43E-02	4.58E-01
4.20E-01	6.40E-01	-4.83E-02	4.59E-01
4.30E-01	6.40E-01	-4.22E-02	4.61E-01
4.40E-01	6.40E-01	-3.60E-02	4.63E-01
4.50E-01	6.40E-01	-2.97E-02	4.65E-01
4.60E-01	6.40E-01	-2.33E-02	4.67E-01
4.70E-01	6.40E-01	-1.68E-02	4.68E-01
4.80E-01	6.40E-01	-1.01E-02	4.70E-01
4.90E-01	6.40E-01	-3.39E-03	4.72E-01
5.00E-01	6.40E-01	3.47E-03	4.74E-01
5.10E-01	6.40E-01	1.04E-02	4.76E-01
5.20E-01	6.40E-01	1.75E-02	4.78E-01
5.30E-01	6.40E-01	2.48E-02	4.80E-01
5.40E-01	6.40E-01	3.21E-02	4.82E-01
5.50E-01	6.40E-01	3.96E-02	4.84E-01
5.60E-01	6.40E-01	4.72E-02	4.86E-01
5.70E-01	6.40E-01	5.50E-02	4.88E-01
5.80E-01	6.40E-01	6.29E-02	4.90E-01
5.90E-01	6.40E-01	7.10E-02	4.93E-01
6.00E-01	6.40E-01	7.92E-02	4.95E-01
6.10E-01	6.40E-01	8.76E-02	4.97E-01
6.20E-01	6.40E-01	9.61E-02	4.99E-01
6.30E-01	6.40E-01	1.05E-01	5.02E-01
6.40E-01	6.40E-01	1.14E-01	5.04E-01
6.50E-01	6.40E-01	1.23E-01	5.06E-01
6.60E-01	6.40E-01	1.32E-01	5.09E-01
6.70E-01	6.40E-01	1.41E-01	5.11E-01
6.80E-01	6.40E-01	1.51E-01	5.14E-01
6.90E-01	6.40E-01	1.61E-01	5.16E-01
7.00E-01	6.40E-01	1.71E-01	5.19E-01
7.10E-01	6.40E-01	1.81E-01	5.21E-01
7.20E-01	6.40E-01	1.92E-01	5.24E-01
7.30E-01	6.40E-01	2.02E-01	5.27E-01
7.40E-01	6.40E-01	2.13E-01	5.30E-01
7.50E-01	6.40E-01	2.25E-01	5.32E-01
7.60E-01	6.40E-01	2.36E-01	5.35E-01
7.70E-01	6.40E-01	2.48E-01	5.38E-01
7.80E-01	6.40E-01	2.60E-01	5.41E-01
7.90E-01	6.40E-01	2.72E-01	5.44E-01
8.00E-01	6.40E-01	2.85E-01	5.47E-01
8.10E-01	6.40E-01	2.98E-01	5.50E-01
8.20E-01	6.40E-01	3.11E-01	5.54E-01
8.30E-01	6.40E-01	3.25E-01	5.57E-01
8.40E-01	6.40E-01	3.39E-01	5.61E-01
8.50E-01	6.40E-01	3.53E-01	5.64E-01
8.60E-01	6.40E-01	3.68E-01	5.68E-01
8.70E-01	6.40E-01	3.84E-01	5.71E-01
8.80E-01	6.40E-01	3.99E-01	5.75E-01
8.90E-01	6.40E-01	4.16E-01	5.79E-01
9.00E-01	6.40E-01	4.32E-01	5.83E-01
9.10E-01	6.40E-01	4.49E-01	5.87E-01
9.20E-01	6.40E-01	4.67E-01	5.92E-01
9.30E-01	6.40E-01	4.86E-01	5.96E-01
9.40E-01	6.40E-01	5.05E-01	6.01E-01
9.50E-01	6.40E-01	5.24E-01	6.06E-01
9.60E-01	6.40E-01	5.45E-01	6.11E-01
9.70E-01	6.40E-01	5.67E-01	6.17E-01
9.80E-01	6.40E-01	5.89E-01	6.23E-01
9.90E-01	6.40E-01	6.13E-01	6.31E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	6.50E-01	-2.42E-01	4.08E-01
1.00E-02	6.50E-01	-2.38E-01	4.10E-01
2.00E-02	6.50E-01	-2.35E-01	4.11E-01
3.00E-02	6.50E-01	-2.31E-01	4.12E-01
4.00E-02	6.50E-01	-2.27E-01	4.13E-01
5.00E-02	6.50E-01	-2.24E-01	4.14E-01
6.00E-02	6.50E-01	-2.20E-01	4.16E-01
7.00E-02	6.50E-01	-2.16E-01	4.17E-01
8.00E-02	6.50E-01	-2.13E-01	4.18E-01
9.00E-02	6.50E-01	-2.09E-01	4.19E-01
1.00E-01	6.50E-01	-2.05E-01	4.21E-01
1.10E-01	6.50E-01	-2.01E-01	4.22E-01
1.20E-01	6.50E-01	-1.97E-01	4.23E

α	β	$\Phi(\alpha, \beta)$	τ
0.00E+00	6.60E-01	-2.43E-01	4.17E-01
1.00E-02	6.60E-01	-2.40E-01	4.18E-01
2.00E-02	6.60E-01	-2.36E-01	4.19E-01
3.00E-02	6.60E-01	-2.33E-01	4.21E-01
4.00E-02	6.60E-01	-2.29E-01	4.22E-01
5.00E-02	6.60E-01	-2.25E-01	4.23E-01
6.00E-02	6.60E-01	-2.22E-01	4.24E-01
7.00E-02	6.60E-01	-2.18E-01	4.26E-01
8.00E-02	6.60E-01	-2.14E-01	4.27E-01
9.00E-02	6.60E-01	-2.10E-01	4.28E-01
1.00E-01	6.60E-01	-2.06E-01	4.30E-01
1.10E-01	6.60E-01	-2.02E-01	4.31E-01
1.20E-01	6.60E-01	-1.98E-01	4.32E-01
1.30E-01	6.60E-01	-1.94E-01	4.34E-01
1.40E-01	6.60E-01	-1.90E-01	4.35E-01
1.50E-01	6.60E-01	-1.86E-01	4.36E-01
1.60E-01	6.60E-01	-1.82E-01	4.38E-01
1.70E-01	6.60E-01	-1.78E-01	4.39E-01
1.80E-01	6.60E-01	-1.73E-01	4.41E-01
1.90E-01	6.60E-01	-1.69E-01	4.42E-01
2.00E-01	6.60E-01	-1.65E-01	4.44E-01
2.10E-01	6.60E-01	-1.60E-01	4.45E-01
2.20E-01	6.60E-01	-1.56E-01	4.47E-01
2.30E-01	6.60E-01	-1.51E-01	4.48E-01
2.40E-01	6.60E-01	-1.47E-01	4.49E-01
2.50E-01	6.60E-01	-1.42E-01	4.51E-01
2.60E-01	6.60E-01	-1.37E-01	4.53E-01
2.70E-01	6.60E-01	-1.32E-01	4.54E-01
2.80E-01	6.60E-01	-1.27E-01	4.56E-01
2.90E-01	6.60E-01	-1.22E-01	4.57E-01
3.00E-01	6.60E-01	-1.17E-01	4.59E-01
3.10E-01	6.60E-01	-1.12E-01	4.60E-01
3.20E-01	6.60E-01	-1.07E-01	4.62E-01
3.30E-01	6.60E-01	-1.02E-01	4.64E-01
3.40E-01	6.60E-01	-9.62E-02	4.65E-01
3.50E-01	6.60E-01	-9.08E-02	4.67E-01
3.60E-01	6.60E-01	-8.53E-02	4.69E-01
3.70E-01	6.60E-01	-7.97E-02	4.70E-01
3.80E-01	6.60E-01	-7.40E-02	4.72E-01
3.90E-01	6.60E-01	-6.82E-02	4.74E-01
4.00E-01	6.60E-01	-6.23E-02	4.76E-01
4.10E-01	6.60E-01	-5.63E-02	4.78E-01
4.20E-01	6.60E-01	-5.03E-02	4.79E-01
4.30E-01	6.60E-01	-4.41E-02	4.81E-01
4.40E-01	6.60E-01	-3.78E-02	4.83E-01
4.50E-01	6.60E-01	-3.15E-02	4.85E-01
4.60E-01	6.60E-01	-2.50E-02	4.87E-01
4.70E-01	6.60E-01	-1.84E-02	4.89E-01
4.80E-01	6.60E-01	-1.17E-02	4.91E-01
4.90E-01	6.60E-01	-4.87E-03	4.93E-01
5.00E-01	6.60E-01	2.06E-03	4.95E-01
5.10E-01	6.60E-01	9.12E-03	4.97E-01
5.20E-01	6.60E-01	1.63E-02	4.99E-01
5.30E-01	6.60E-01	2.36E-02	5.01E-01
5.40E-01	6.60E-01	3.11E-02	5.03E-01
5.50E-01	6.60E-01	3.87E-02	5.05E-01
5.60E-01	6.60E-01	4.64E-02	5.07E-01
5.70E-01	6.60E-01	5.43E-02	5.09E-01
5.80E-01	6.60E-01	6.23E-02	5.11E-01
5.90E-01	6.60E-01	7.05E-02	5.14E-01
6.00E-01	6.60E-01	7.88E-02	5.16E-01
6.10E-01	6.60E-01	8.73E-02	5.18E-01
6.20E-01	6.60E-01	9.60E-02	5.20E-01
6.30E-01	6.60E-01	1.05E-01	5.23E-01
6.40E-01	6.60E-01	1.14E-01	5.25E-01
6.50E-01	6.60E-01	1.23E-01	5.28E-01
6.60E-01	6.60E-01	1.32E-01	5.30E-01
6.70E-01	6.60E-01	1.42E-01	5.33E-01
6.80E-01	6.60E-01	1.52E-01	5.35E-01
6.90E-01	6.60E-01	1.62E-01	5.38E-01
7.00E-01	6.60E-01	1.72E-01	5.40E-01
7.10E-01	6.60E-01	1.83E-01	5.43E-01
7.20E-01	6.60E-01	1.94E-01	5.46E-01
7.30E-01	6.60E-01	2.05E-01	5.48E-01
7.40E-01	6.60E-01	2.16E-01	5.51E-01
7.50E-01	6.60E-01	2.27E-01	5.54E-01
7.60E-01	6.60E-01	2.39E-01	5.57E-01
7.70E-01	6.60E-01	2.51E-01	5.60E-01
7.80E-01	6.60E-01	2.64E-01	5.63E-01
7.90E-01	6.60E-01	2.76E-01	5.66E-01
8.00E-01	6.60E-01	2.89E-01	5.69E-01
8.10E-01	6.60E-01	3.03E-01	5.72E-01
8.20E-01	6.60E-01	3.17E-01	5.75E-01
8.30E-01	6.60E-01	3.31E-01	5.79E-01
8.40E-01	6.60E-01	3.45E-01	5.82E-01
8.50E-01	6.60E-01	3.60E-01	5.86E-01
8.60E-01	6.60E-01	3.76E-01	5.89E-01
8.70E-01	6.60E-01	3.91E-01	5.93E-01
8.80E-01	6.60E-01	4.08E-01	5.97E-01
8.90E-01	6.60E-01	4.25E-01	6.01E-01
9.00E-01	6.60E-01	4.42E-01	6.05E-01
9.10E-01	6.60E-01	4.60E-01	6.09E-01
9.20E-01	6.60E-01	4.79E-01	6.13E-01
9.30E-01	6.60E-01	4.98E-01	6.18E-01
9.40E-01	6.60E-01	5.18E-01	6.22E-01
9.50E-01	6.60E-01	5.39E-01	6.27E-01
9.60E-01	6.60E-01	5.60E-01	6.32E-01
9.70E-01	6.60E-01	5.83E-01	6.38E-01
9.80E-01	6.60E-01	6.07E-01	6.44E-01
9.90E-01	6.60E-01	6.32E-01	6.51E-01

α	β	$\Phi(\alpha, \beta)$	τ
0.00E+00	6.70E-01	-2.44E-01	4.26E-01
1.00E-02	6.70E-01	-2.41E-01	4.27E-01
2.00E-02	6.70E-01	-2.37E-01	4.28E-01
3.00E-02	6.70E-01	-2.34E-01	4.29E-01
4.00E-02	6.70E-01	-2.30E-01	4.31E-01
5.00E-02	6.70E-01	-2.27E-01	4.32E-01
6.00E-02	6.70E-01	-2.23E-01	4.33E-01
7.00E-02	6.70E-01	-2.19E-01	4.35E-01
8.00E-02	6.70E-01	-2.15E-01	4.36E-01
9.00E-02	6.70E-01	-2.12E-01	4.37E-01
1.00E-01	6.70E-01	-2.08E-01	4.39E-01
1.10E-01	6.70E-01	-2.04E-01	4.40E-01
1.20E-01	6.70E-01	-2.00E-01	4.41E-01
1.30E-01	6.70E-01	-1.96E-01	4.43E-01
1.40E-01	6.70E-01	-1.92E-01	4.44E-01
1.50E-01	6.70E-01	-1.87E-01	4.46E-01
1.60E-01	6.70E-01	-1.83E-01	4.47E-01
1.70E-01	6.70E-01	-1.79E-01	4.49E-01
1.80E-01	6.70E-01	-1.75E-01	4.50E-01
1.90E-01	6.70E-01	-1.70E-01	4.51E-01
2.00E-01	6.70E-01	-1.66E-01	4.53E-01
2.10E-01	6.70E-01	-1.61E-01	4.54E-01
2.20E-01	6.70E-01	-1.57E-01	4.56E-01
2.30E-01	6.70E-01	-1.52E-01	4.58E-01
2.40E-01	6.70E-01	-1.48E-01	4.59E-01
2.50E-01	6.70E-01	-1.43E-01	4.61E-01
2.60E-01	6.70E-01	-1.38E-01	4.62E-01
2.70E-01	6.70E-01	-1.33E-01	4.64E-01
2.80E-01	6.70E-01	-1.28E-01	4.65E-01
2.90E-01	6.70E-01	-1.23E-01	4.67E-01
3.00E-01	6.70E-01	-1.18E-01	4.69E-01
3.10E-01	6.70E-01	-1.13E-01	4.70E-01
3.20E-01	6.70E-01	-1.08E-01	4.72E-01
3.30E-01	6.70E-01	-1.03E-01	4.74E-01
3.40E-01	6.70E-01	-9.73E-02	4.75E-01
3.50E-01	6.70E-01	-9.19E-02	4.77E-01
3.60E-01	6.70E-01	-8.63E-02	4.79E-01
3.70E-01	6.70E-01	-8.07E-02	4.81E-01
3.80E-01	6.70E-01	-7.50E-02	4.82E-01
3.90E-01	6.70E-01	-6.92E-02	4.84E-01
4.00E-01	6.70E-01	-6.33E-02	4.86E-01
4.10E-01	6.70E-01	-5.73E-02	4.88E-01
4.20E-01	6.70E-01	-5.12E-02	4.90E-01
4.30E-01	6.70E-01	-4.50E-02	4.91E-01
4.40E-01	6.70E-01	-3.88E-02	4.93E-01
4.50E-01	6.70E-01	-3.24E-02	4.95E-01
4.60E-01	6.70E-01	-2.59E-02	4.97E-01
4.70E-01	6.70E-01	-1.92E-02	4.99E-01
4.80E-01	6.70E-01	-1.25E-02	5.01E-01
4.90E-01	6.70E-01	-5.68E-03	5.03E-01
5.00E-01	6.70E-01	1.29E-03	5.05E-01
5.10E-01	6.70E-01	8.38E-03	5.07E-01
5.20E-01	6.70E-01	1.56E-02	5.09E-01
5.30E-01	6.70E-01	2.29E-02	5.11E-01
5.40E-01	6.70E-01	3.04E-02	5.13E-01
5.50E-01	6.70E-01	3.81E-02	5.15E-01
5.60E-01	6.70E-01	4.58E-02	5.18E-01
5.70E-01	6.70E-01	5.37E-02	5.20E-01
5.80E-01	6.70E-01	6.18E-02	5.22E-01
5.90E-01	6.70E-01	7.00E-02	5.24E-01
6.00E-01	6.70E-01	7.84E-02	5.27E-01
6.10E-01	6.70E-01	8.70E-02	5.29E-01
6.20E-01	6.70E-01	9.57E-02	5.31E-01
6.30E-01	6.70E-01	1.05E-01	5.34E-01
6.40E-01	6.70E-01	1.14E-01	5.36E-01
6.50E-01	6.70E-01	1.23E-01	5.38E-01
6.60E-01	6.70E-01	1.33E-01	5.41E-01
6.70E-01	6.70E-01	1.42E-01	5.43E-01
6.80E-01	6.70E-01	1.52E-01	5.46E-01
6.90E-01	6.70E-01	1.62E-01	5.49E-01
7.00E-01	6.70E-01	1.73E-01	5.51E-01
7.10E-01	6.70E-01	1.83E-01	5.54E-01
7.20E-01	6.70E-01	1.94E-01	5.57E-01
7.30E-01	6.70E-01	2.05E-01	5.59E-01
7.40E-01	6.70E-01	2.17E-01	5.62E-01
7.50E-01	6.70E-01	2.28E-01	5.65E-01
7.60E-01	6.70E-01	2.40E-01	5.68E-01
7.70E-01	6.70E-01	2.52E-01	5.71E-01
7.80E-01	6.70E-01	2.65E-01	5.74E-01
7.90E-01	6.70E-01	2.78E-01	5.77E-01
8.00E-01	6.70E-01	2.91E-01	5.80E-01
8.10E-01	6.70E-01	3.05E-01	5.83E-01
8.20E-01	6.70E-01	3.19E-01	5.86E-01
8.30E-01	6.70E-01	3.33E-01	5.90E-01
8.40E-01	6.70E-01	3.48E-01	5.93E-01
8.50E-01	6.70E-01	3.63E-01	5.97E-01
8.60E-01	6.70E-01	3.79E-01	6.00E-01
8.70E-01	6.70E-01	3.95E-01	6.04E-01
8.80E-01	6.70E-01	4.12E-01	6.08E-01
8.90E-01	6.70E-01	4.29E-01	6.11E-01
9.00E-01	6.70E-01	4.47E-01	6.15E-01
9.10E-01	6.70E-01	4.65E-01	6.20E-01
9.20E-01	6.70E-01	4.84E-01	6.24E-01
9.30E-01	6.70E-01	5.04E-01	6.28E-01
9.40E-01	6.70E-01	5.24E-01	6.33E-01
9.50E-01	6.70E-01	5.46E-01	6.38E-01
9.60E-01	6.70E-01	5.68E-01	6.43E-01
9.70E-01	6.70E-01	5.91E-01	6.48E-01
9.80E-01	6.70E-01	6.15E-01	6.54E-01
9.90E-01	6.70E-01	6.41E-01	6.61E-01

α	β	$\Phi(\alpha, \beta)$	τ
0.00E+00	6.80E-01	-2.46E-01	4.34E-01
1.00E-02	6.80E-01	-2.42E-01	4.36E-01
2.00E-02	6.80E-01	-2.39E-01	4.37E-01
3.00E-02	6.80E-01	-2.35E-01	4.38E-01
4.00E-02	6.80E-01	-2.31E-01	4.40E-01
5.00E-02	6.80E-01	-2.28E-01	4.41E-01
6.00E-02	6.80E-01	-2.24E-01	4.42E-01
7.00E-02	6.80E-01	-2.20E-01	4.44E-01
8.00E-02	6.80E-01	-2.17E-01	4.45E-01
9.00E-02	6.80E-01	-2.13E-01	4.46E-01
1.00E-01	6.80E-01	-2.09E-01	4.48E-01
1.10E-01	6.80E-01	-2.05E-01	4.49E-01
1.20E-01	6.80E-01	-2.01E-01	4.

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	6.90E-01	-2.47E-01	4.43E-01
1.00E-02	6.90E-01	-2.43E-01	4.45E-01
2.00E-02	6.90E-01	-2.40E-01	4.46E-01
3.00E-02	6.90E-01	-2.36E-01	4.47E-01
4.00E-02	6.90E-01	-2.33E-01	4.49E-01
5.00E-02	6.90E-01	-2.29E-01	4.50E-01
6.00E-02	6.90E-01	-2.25E-01	4.51E-01
7.00E-02	6.90E-01	-2.21E-01	4.53E-01
8.00E-02	6.90E-01	-2.18E-01	4.54E-01
9.00E-02	6.90E-01	-2.14E-01	4.56E-01
1.00E-01	6.90E-01	-2.10E-01	4.57E-01
1.10E-01	6.90E-01	-2.06E-01	4.59E-01
1.20E-01	6.90E-01	-2.02E-01	4.60E-01
1.30E-01	6.90E-01	-1.98E-01	4.62E-01
1.40E-01	6.90E-01	-1.94E-01	4.63E-01
1.50E-01	6.90E-01	-1.90E-01	4.65E-01
1.60E-01	6.90E-01	-1.85E-01	4.66E-01
1.70E-01	6.90E-01	-1.81E-01	4.68E-01
1.80E-01	6.90E-01	-1.77E-01	4.69E-01
1.90E-01	6.90E-01	-1.73E-01	4.71E-01
2.00E-01	6.90E-01	-1.68E-01	4.72E-01
2.10E-01	6.90E-01	-1.64E-01	4.74E-01
2.20E-01	6.90E-01	-1.59E-01	4.75E-01
2.30E-01	6.90E-01	-1.55E-01	4.77E-01
2.40E-01	6.90E-01	-1.50E-01	4.79E-01
2.50E-01	6.90E-01	-1.45E-01	4.80E-01
2.60E-01	6.90E-01	-1.40E-01	4.82E-01
2.70E-01	6.90E-01	-1.35E-01	4.84E-01
2.80E-01	6.90E-01	-1.31E-01	4.85E-01
2.90E-01	6.90E-01	-1.26E-01	4.87E-01
3.00E-01	6.90E-01	-1.20E-01	4.89E-01
3.10E-01	6.90E-01	-1.15E-01	4.90E-01
3.20E-01	6.90E-01	-1.10E-01	4.92E-01
3.30E-01	6.90E-01	-1.05E-01	4.94E-01
3.40E-01	6.90E-01	-9.94E-02	4.96E-01
3.50E-01	6.90E-01	-9.39E-02	4.97E-01
3.60E-01	6.90E-01	-8.84E-02	4.99E-01
3.70E-01	6.90E-01	-8.28E-02	5.01E-01
3.80E-01	6.90E-01	-7.70E-02	5.03E-01
3.90E-01	6.90E-01	-7.12E-02	5.05E-01
4.00E-01	6.90E-01	-6.53E-02	5.07E-01
4.10E-01	6.90E-01	-5.93E-02	5.08E-01
4.20E-01	6.90E-01	-5.32E-02	5.10E-01
4.30E-01	6.90E-01	-4.70E-02	5.12E-01
4.40E-01	6.90E-01	-4.07E-02	5.14E-01
4.50E-01	6.90E-01	-3.42E-02	5.16E-01
4.60E-01	6.90E-01	-2.77E-02	5.18E-01
4.70E-01	6.90E-01	-2.11E-02	5.20E-01
4.80E-01	6.90E-01	-1.43E-02	5.22E-01
4.90E-01	6.90E-01	-7.41E-03	5.24E-01
5.00E-01	6.90E-01	-4.06E-04	5.26E-01
5.10E-01	6.90E-01	6.73E-03	5.28E-01
5.20E-01	6.90E-01	1.40E-02	5.31E-01
5.30E-01	6.90E-01	2.14E-02	5.33E-01
5.40E-01	6.90E-01	2.89E-02	5.35E-01
5.50E-01	6.90E-01	3.66E-02	5.37E-01
5.60E-01	6.90E-01	4.44E-02	5.39E-01
5.70E-01	6.90E-01	5.24E-02	5.41E-01
5.80E-01	6.90E-01	6.06E-02	5.44E-01
5.90E-01	6.90E-01	6.89E-02	5.46E-01
6.00E-01	6.90E-01	7.74E-02	5.48E-01
6.10E-01	6.90E-01	8.60E-02	5.51E-01
6.20E-01	6.90E-01	9.48E-02	5.53E-01
6.30E-01	6.90E-01	1.04E-01	5.55E-01
6.40E-01	6.90E-01	1.13E-01	5.58E-01
6.50E-01	6.90E-01	1.23E-01	5.60E-01
6.60E-01	6.90E-01	1.32E-01	5.63E-01
6.70E-01	6.90E-01	1.42E-01	5.65E-01
6.80E-01	6.90E-01	1.52E-01	5.68E-01
6.90E-01	6.90E-01	1.62E-01	5.71E-01
7.00E-01	6.90E-01	1.73E-01	5.73E-01
7.10E-01	6.90E-01	1.84E-01	5.76E-01
7.20E-01	6.90E-01	1.95E-01	5.79E-01
7.30E-01	6.90E-01	2.06E-01	5.81E-01
7.40E-01	6.90E-01	2.18E-01	5.84E-01
7.50E-01	6.90E-01	2.30E-01	5.87E-01
7.60E-01	6.90E-01	2.42E-01	5.90E-01
7.70E-01	6.90E-01	2.54E-01	5.93E-01
7.80E-01	6.90E-01	2.67E-01	5.96E-01
7.90E-01	6.90E-01	2.80E-01	5.99E-01
8.00E-01	6.90E-01	2.94E-01	6.02E-01
8.10E-01	6.90E-01	3.08E-01	6.05E-01
8.20E-01	6.90E-01	3.22E-01	6.09E-01
8.30E-01	6.90E-01	3.37E-01	6.12E-01
8.40E-01	6.90E-01	3.53E-01	6.15E-01
8.50E-01	6.90E-01	3.68E-01	6.19E-01
8.60E-01	6.90E-01	3.85E-01	6.22E-01
8.70E-01	6.90E-01	4.01E-01	6.26E-01
8.80E-01	6.90E-01	4.19E-01	6.29E-01
8.90E-01	6.90E-01	4.37E-01	6.33E-01
9.00E-01	6.90E-01	4.55E-01	6.37E-01
9.10E-01	6.90E-01	4.74E-01	6.41E-01
9.20E-01	6.90E-01	4.94E-01	6.45E-01
9.30E-01	6.90E-01	5.15E-01	6.50E-01
9.40E-01	6.90E-01	5.36E-01	6.54E-01
9.50E-01	6.90E-01	5.59E-01	6.59E-01
9.60E-01	6.90E-01	5.82E-01	6.64E-01
9.70E-01	6.90E-01	6.07E-01	6.69E-01
9.80E-01	6.90E-01	6.32E-01	6.75E-01
9.90E-01	6.90E-01	6.60E-01	6.82E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	7.00E-01	-2.48E-01	4.52E-01
1.00E-02	7.00E-01	-2.44E-01	4.54E-01
2.00E-02	7.00E-01	-2.41E-01	4.55E-01
3.00E-02	7.00E-01	-2.37E-01	4.56E-01
4.00E-02	7.00E-01	-2.33E-01	4.58E-01
5.00E-02	7.00E-01	-2.30E-01	4.59E-01
6.00E-02	7.00E-01	-2.26E-01	4.61E-01
7.00E-02	7.00E-01	-2.22E-01	4.62E-01
8.00E-02	7.00E-01	-2.19E-01	4.64E-01
9.00E-02	7.00E-01	-2.15E-01	4.65E-01
1.00E-01	7.00E-01	-2.11E-01	4.67E-01
1.10E-01	7.00E-01	-2.07E-01	4.68E-01
1.20E-01	7.00E-01	-2.03E-01	4.70E-01
1.30E-01	7.00E-01	-1.99E-01	4.71E-01
1.40E-01	7.00E-01	-1.95E-01	4.73E-01
1.50E-01	7.00E-01	-1.91E-01	4.74E-01
1.60E-01	7.00E-01	-1.86E-01	4.76E-01
1.70E-01	7.00E-01	-1.82E-01	4.77E-01
1.80E-01	7.00E-01	-1.78E-01	4.79E-01
1.90E-01	7.00E-01	-1.74E-01	4.80E-01
2.00E-01	7.00E-01	-1.69E-01	4.82E-01
2.10E-01	7.00E-01	-1.65E-01	4.84E-01
2.20E-01	7.00E-01	-1.60E-01	4.85E-01
2.30E-01	7.00E-01	-1.56E-01	4.87E-01
2.40E-01	7.00E-01	-1.51E-01	4.89E-01
2.50E-01	7.00E-01	-1.46E-01	4.90E-01
2.60E-01	7.00E-01	-1.41E-01	4.92E-01
2.70E-01	7.00E-01	-1.36E-01	4.94E-01
2.80E-01	7.00E-01	-1.32E-01	4.95E-01
2.90E-01	7.00E-01	-1.27E-01	4.97E-01
3.00E-01	7.00E-01	-1.21E-01	4.99E-01
3.10E-01	7.00E-01	-1.16E-01	5.01E-01
3.20E-01	7.00E-01	-1.11E-01	5.02E-01
3.30E-01	7.00E-01	-1.06E-01	5.04E-01
3.40E-01	7.00E-01	-1.00E-01	5.06E-01
3.50E-01	7.00E-01	-9.49E-02	5.08E-01
3.60E-01	7.00E-01	-8.94E-02	5.10E-01
3.70E-01	7.00E-01	-8.37E-02	5.11E-01
3.80E-01	7.00E-01	-7.80E-02	5.13E-01
3.90E-01	7.00E-01	-7.22E-02	5.15E-01
4.00E-01	7.00E-01	-6.63E-02	5.17E-01
4.10E-01	7.00E-01	-6.03E-02	5.19E-01
4.20E-01	7.00E-01	-5.41E-02	5.21E-01
4.30E-01	7.00E-01	-4.79E-02	5.23E-01
4.40E-01	7.00E-01	-4.16E-02	5.25E-01
4.50E-01	7.00E-01	-3.52E-02	5.27E-01
4.60E-01	7.00E-01	-2.87E-02	5.29E-01
4.70E-01	7.00E-01	-2.20E-02	5.31E-01
4.80E-01	7.00E-01	-1.52E-02	5.33E-01
4.90E-01	7.00E-01	-8.34E-03	5.35E-01
5.00E-01	7.00E-01	-1.33E-03	5.37E-01
5.10E-01	7.00E-01	5.82E-03	5.39E-01
5.20E-01	7.00E-01	1.31E-02	5.41E-01
5.30E-01	7.00E-01	2.05E-02	5.44E-01
5.40E-01	7.00E-01	2.81E-02	5.46E-01
5.50E-01	7.00E-01	3.58E-02	5.48E-01
5.60E-01	7.00E-01	4.36E-02	5.50E-01
5.70E-01	7.00E-01	5.16E-02	5.52E-01
5.80E-01	7.00E-01	5.98E-02	5.55E-01
5.90E-01	7.00E-01	6.81E-02	5.57E-01
6.00E-01	7.00E-01	7.66E-02	5.59E-01
6.10E-01	7.00E-01	8.53E-02	5.62E-01
6.20E-01	7.00E-01	9.42E-02	5.64E-01
6.30E-01	7.00E-01	1.03E-01	5.67E-01
6.40E-01	7.00E-01	1.13E-01	5.69E-01
6.50E-01	7.00E-01	1.22E-01	5.72E-01
6.60E-01	7.00E-01	1.32E-01	5.74E-01
6.70E-01	7.00E-01	1.42E-01	5.77E-01
6.80E-01	7.00E-01	1.52E-01	5.79E-01
6.90E-01	7.00E-01	1.62E-01	5.82E-01
7.00E-01	7.00E-01	1.73E-01	5.84E-01
7.10E-01	7.00E-01	1.84E-01	5.87E-01
7.20E-01	7.00E-01	1.95E-01	5.90E-01
7.30E-01	7.00E-01	2.06E-01	5.93E-01
7.40E-01	7.00E-01	2.18E-01	5.95E-01
7.50E-01	7.00E-01	2.30E-01	5.98E-01
7.60E-01	7.00E-01	2.42E-01	6.01E-01
7.70E-01	7.00E-01	2.55E-01	6.04E-01
7.80E-01	7.00E-01	2.68E-01	6.07E-01
7.90E-01	7.00E-01	2.81E-01	6.10E-01
8.00E-01	7.00E-01	2.95E-01	6.13E-01
8.10E-01	7.00E-01	3.09E-01	6.16E-01
8.20E-01	7.00E-01	3.24E-01	6.20E-01
8.30E-01	7.00E-01	3.39E-01	6.23E-01
8.40E-01	7.00E-01	3.54E-01	6.26E-01
8.50E-01	7.00E-01	3.70E-01	6.30E-01
8.60E-01	7.00E-01	3.87E-01	6.33E-01
8.70E-01	7.00E-01	4.04E-01	6.37E-01
8.80E-01	7.00E-01	4.22E-01	6.40E-01
8.90E-01	7.00E-01	4.40E-01	6.44E-01
9.00E-01	7.00E-01	4.59E-01	6.48E-01
9.10E-01	7.00E-01	4.79E-01	6.52E-01
9.20E-01	7.00E-01	4.99E-01	6.56E-01
9.30E-01	7.00E-01	5.20E-01	6.60E-01
9.40E-01	7.00E-01	5.42E-01	6.65E-01
9.50E-01	7.00E-01	5.65E-01	6.70E-01
9.60E-01	7.00E-01	5.89E-01	6.74E-01
9.70E-01	7.00E-01	6.14E-01	6.80E-01
9.80E-01	7.00E-01	6.41E-01	6.85E-01
9.90E-01	7.00E-01	6.69E-01	6.92E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	7.10E-01	-2.49E-01	4.61E-01
1.00E-02	7.10E-01	-2.45E-01	4.63E-01
2.00E-02	7.10E-01	-2.41E-01	4.64E-01
3.00E-02	7.10E-01	-2.38E-01	4.66E-01
4.00E-02	7.10E-01	-2.34E-01	4.67E-01
5.00E-02	7.10E-01	-2.31E-01	4.69E-01
6.00E-02	7.10E-01	-2.27E-01	4.70E-01
7.00E-02	7.10E-01	-2.23E-01	4.72E-01
8.00E-02	7.10E-01	-2.19E-01	4.73E-01
9.00E-02	7.10E-01	-2.16E-01	4.75E-01
1.00E-01	7.10E-01	-2.12E-01	4.76E-01
1.10E-01	7.10E-01	-2.08E-01	4.78E-01
1.20E-01	7.10E-01	-2.04E-01	4.79E

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	7.20E-01	-2.49E-01	4.71E-01
1.00E-02	7.20E-01	-2.46E-01	4.72E-01
2.00E-02	7.20E-01	-2.42E-01	4.74E-01
3.00E-02	7.20E-01	-2.39E-01	4.75E-01
4.00E-02	7.20E-01	-2.35E-01	4.77E-01
5.00E-02	7.20E-01	-2.31E-01	4.78E-01
6.00E-02	7.20E-01	-2.28E-01	4.80E-01
7.00E-02	7.20E-01	-2.24E-01	4.81E-01
8.00E-02	7.20E-01	-2.20E-01	4.83E-01
9.00E-02	7.20E-01	-2.16E-01	4.84E-01
1.00E-01	7.20E-01	-2.12E-01	4.86E-01
1.10E-01	7.20E-01	-2.08E-01	4.88E-01
1.20E-01	7.20E-01	-2.04E-01	4.89E-01
1.30E-01	7.20E-01	-2.00E-01	4.91E-01
1.40E-01	7.20E-01	-1.96E-01	4.92E-01
1.50E-01	7.20E-01	-1.92E-01	4.94E-01
1.60E-01	7.20E-01	-1.88E-01	4.96E-01
1.70E-01	7.20E-01	-1.84E-01	4.97E-01
1.80E-01	7.20E-01	-1.79E-01	4.99E-01
1.90E-01	7.20E-01	-1.75E-01	5.01E-01
2.00E-01	7.20E-01	-1.71E-01	5.02E-01
2.10E-01	7.20E-01	-1.66E-01	5.04E-01
2.20E-01	7.20E-01	-1.62E-01	5.06E-01
2.30E-01	7.20E-01	-1.57E-01	5.07E-01
2.40E-01	7.20E-01	-1.52E-01	5.09E-01
2.50E-01	7.20E-01	-1.48E-01	5.11E-01
2.60E-01	7.20E-01	-1.43E-01	5.13E-01
2.70E-01	7.20E-01	-1.38E-01	5.14E-01
2.80E-01	7.20E-01	-1.33E-01	5.16E-01
2.90E-01	7.20E-01	-1.28E-01	5.18E-01
3.00E-01	7.20E-01	-1.23E-01	5.20E-01
3.10E-01	7.20E-01	-1.18E-01	5.22E-01
3.20E-01	7.20E-01	-1.13E-01	5.23E-01
3.30E-01	7.20E-01	-1.08E-01	5.25E-01
3.40E-01	7.20E-01	-1.02E-01	5.27E-01
3.50E-01	7.20E-01	-9.67E-02	5.29E-01
3.60E-01	7.20E-01	-9.12E-02	5.31E-01
3.70E-01	7.20E-01	-8.56E-02	5.33E-01
3.80E-01	7.20E-01	-7.99E-02	5.35E-01
3.90E-01	7.20E-01	-7.41E-02	5.37E-01
4.00E-01	7.20E-01	-6.82E-02	5.39E-01
4.10E-01	7.20E-01	-6.22E-02	5.41E-01
4.20E-01	7.20E-01	-5.61E-02	5.43E-01
4.30E-01	7.20E-01	-4.99E-02	5.45E-01
4.40E-01	7.20E-01	-4.36E-02	5.47E-01
4.50E-01	7.20E-01	-3.71E-02	5.49E-01
4.60E-01	7.20E-01	-3.06E-02	5.51E-01
4.70E-01	7.20E-01	-2.40E-02	5.53E-01
4.80E-01	7.20E-01	-1.72E-02	5.55E-01
4.90E-01	7.20E-01	-1.03E-02	5.57E-01
5.00E-01	7.20E-01	-3.31E-03	5.59E-01
5.10E-01	7.20E-01	3.83E-03	5.61E-01
5.20E-01	7.20E-01	1.11E-02	5.64E-01
5.30E-01	7.20E-01	1.85E-02	5.66E-01
5.40E-01	7.20E-01	2.61E-02	5.68E-01
5.50E-01	7.20E-01	3.38E-02	5.70E-01
5.60E-01	7.20E-01	4.17E-02	5.73E-01
5.70E-01	7.20E-01	4.97E-02	5.75E-01
5.80E-01	7.20E-01	5.79E-02	5.77E-01
5.90E-01	7.20E-01	6.63E-02	5.79E-01
6.00E-01	7.20E-01	7.48E-02	5.82E-01
6.10E-01	7.20E-01	8.35E-02	5.84E-01
6.20E-01	7.20E-01	9.24E-02	5.87E-01
6.30E-01	7.20E-01	1.02E-01	5.89E-01
6.40E-01	7.20E-01	1.11E-01	5.92E-01
6.50E-01	7.20E-01	1.20E-01	5.94E-01
6.60E-01	7.20E-01	1.30E-01	5.97E-01
6.70E-01	7.20E-01	1.40E-01	5.99E-01
6.80E-01	7.20E-01	1.50E-01	6.02E-01
6.90E-01	7.20E-01	1.61E-01	6.04E-01
7.00E-01	7.20E-01	1.72E-01	6.07E-01
7.10E-01	7.20E-01	1.83E-01	6.10E-01
7.20E-01	7.20E-01	1.94E-01	6.13E-01
7.30E-01	7.20E-01	2.05E-01	6.15E-01
7.40E-01	7.20E-01	2.17E-01	6.18E-01
7.50E-01	7.20E-01	2.30E-01	6.21E-01
7.60E-01	7.20E-01	2.42E-01	6.24E-01
7.70E-01	7.20E-01	2.55E-01	6.27E-01
7.80E-01	7.20E-01	2.68E-01	6.30E-01
7.90E-01	7.20E-01	2.82E-01	6.33E-01
8.00E-01	7.20E-01	2.96E-01	6.36E-01
8.10E-01	7.20E-01	3.11E-01	6.39E-01
8.20E-01	7.20E-01	3.26E-01	6.42E-01
8.30E-01	7.20E-01	3.41E-01	6.45E-01
8.40E-01	7.20E-01	3.57E-01	6.49E-01
8.50E-01	7.20E-01	3.74E-01	6.52E-01
8.60E-01	7.20E-01	3.91E-01	6.55E-01
8.70E-01	7.20E-01	4.08E-01	6.59E-01
8.80E-01	7.20E-01	4.27E-01	6.63E-01
8.90E-01	7.20E-01	4.46E-01	6.66E-01
9.00E-01	7.20E-01	4.65E-01	6.70E-01
9.10E-01	7.20E-01	4.86E-01	6.74E-01
9.20E-01	7.20E-01	5.07E-01	6.78E-01
9.30E-01	7.20E-01	5.30E-01	6.82E-01
9.40E-01	7.20E-01	5.53E-01	6.86E-01
9.50E-01	7.20E-01	5.77E-01	6.91E-01
9.60E-01	7.20E-01	6.02E-01	6.96E-01
9.70E-01	7.20E-01	6.29E-01	7.01E-01
9.80E-01	7.20E-01	6.57E-01	7.06E-01
9.90E-01	7.20E-01	6.87E-01	7.12E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	7.30E-01	-2.50E-01	4.80E-01
1.00E-02	7.30E-01	-2.46E-01	4.82E-01
2.00E-02	7.30E-01	-2.43E-01	4.83E-01
3.00E-02	7.30E-01	-2.39E-01	4.85E-01
4.00E-02	7.30E-01	-2.35E-01	4.86E-01
5.00E-02	7.30E-01	-2.32E-01	4.88E-01
6.00E-02	7.30E-01	-2.28E-01	4.90E-01
7.00E-02	7.30E-01	-2.24E-01	4.91E-01
8.00E-02	7.30E-01	-2.21E-01	4.93E-01
9.00E-02	7.30E-01	-2.17E-01	4.94E-01
1.00E-01	7.30E-01	-2.13E-01	4.96E-01
1.10E-01	7.30E-01	-2.09E-01	4.98E-01
1.20E-01	7.30E-01	-2.05E-01	4.99E-01
1.30E-01	7.30E-01	-2.01E-01	5.01E-01
1.40E-01	7.30E-01	-1.97E-01	5.02E-01
1.50E-01	7.30E-01	-1.93E-01	5.04E-01
1.60E-01	7.30E-01	-1.89E-01	5.06E-01
1.70E-01	7.30E-01	-1.84E-01	5.07E-01
1.80E-01	7.30E-01	-1.80E-01	5.09E-01
1.90E-01	7.30E-01	-1.76E-01	5.11E-01
2.00E-01	7.30E-01	-1.71E-01	5.13E-01
2.10E-01	7.30E-01	-1.67E-01	5.14E-01
2.20E-01	7.30E-01	-1.62E-01	5.16E-01
2.30E-01	7.30E-01	-1.58E-01	5.18E-01
2.40E-01	7.30E-01	-1.53E-01	5.20E-01
2.50E-01	7.30E-01	-1.48E-01	5.21E-01
2.60E-01	7.30E-01	-1.44E-01	5.23E-01
2.70E-01	7.30E-01	-1.39E-01	5.25E-01
2.80E-01	7.30E-01	-1.34E-01	5.27E-01
2.90E-01	7.30E-01	-1.29E-01	5.29E-01
3.00E-01	7.30E-01	-1.24E-01	5.30E-01
3.10E-01	7.30E-01	-1.19E-01	5.32E-01
3.20E-01	7.30E-01	-1.14E-01	5.34E-01
3.30E-01	7.30E-01	-1.08E-01	5.36E-01
3.40E-01	7.30E-01	-1.03E-01	5.38E-01
3.50E-01	7.30E-01	-9.76E-02	5.40E-01
3.60E-01	7.30E-01	-9.20E-02	5.42E-01
3.70E-01	7.30E-01	-8.64E-02	5.44E-01
3.80E-01	7.30E-01	-8.07E-02	5.46E-01
3.90E-01	7.30E-01	-7.49E-02	5.48E-01
4.00E-01	7.30E-01	-6.91E-02	5.50E-01
4.10E-01	7.30E-01	-6.31E-02	5.52E-01
4.20E-01	7.30E-01	-5.70E-02	5.54E-01
4.30E-01	7.30E-01	-5.08E-02	5.56E-01
4.40E-01	7.30E-01	-4.45E-02	5.58E-01
4.50E-01	7.30E-01	-3.81E-02	5.60E-01
4.60E-01	7.30E-01	-3.16E-02	5.62E-01
4.70E-01	7.30E-01	-2.50E-02	5.64E-01
4.80E-01	7.30E-01	-1.82E-02	5.66E-01
4.90E-01	7.30E-01	-1.14E-02	5.68E-01
5.00E-01	7.30E-01	-4.37E-03	5.70E-01
5.10E-01	7.30E-01	2.76E-03	5.73E-01
5.20E-01	7.30E-01	1.00E-02	5.75E-01
5.30E-01	7.30E-01	1.74E-02	5.77E-01
5.40E-01	7.30E-01	2.50E-02	5.79E-01
5.50E-01	7.30E-01	3.27E-02	5.82E-01
5.60E-01	7.30E-01	4.06E-02	5.84E-01
5.70E-01	7.30E-01	4.86E-02	5.86E-01
5.80E-01	7.30E-01	5.68E-02	5.89E-01
5.90E-01	7.30E-01	6.51E-02	5.91E-01
6.00E-01	7.30E-01	7.37E-02	5.93E-01
6.10E-01	7.30E-01	8.24E-02	5.96E-01
6.20E-01	7.30E-01	9.13E-02	5.98E-01
6.30E-01	7.30E-01	1.00E-01	6.01E-01
6.40E-01	7.30E-01	1.10E-01	6.03E-01
6.50E-01	7.30E-01	1.19E-01	6.06E-01
6.60E-01	7.30E-01	1.29E-01	6.08E-01
6.70E-01	7.30E-01	1.39E-01	6.11E-01
6.80E-01	7.30E-01	1.49E-01	6.13E-01
6.90E-01	7.30E-01	1.60E-01	6.16E-01
7.00E-01	7.30E-01	1.71E-01	6.19E-01
7.10E-01	7.30E-01	1.82E-01	6.21E-01
7.20E-01	7.30E-01	1.93E-01	6.24E-01
7.30E-01	7.30E-01	2.05E-01	6.27E-01
7.40E-01	7.30E-01	2.17E-01	6.30E-01
7.50E-01	7.30E-01	2.29E-01	6.32E-01
7.60E-01	7.30E-01	2.42E-01	6.35E-01
7.70E-01	7.30E-01	2.55E-01	6.38E-01
7.80E-01	7.30E-01	2.68E-01	6.41E-01
7.90E-01	7.30E-01	2.82E-01	6.44E-01
8.00E-01	7.30E-01	2.96E-01	6.47E-01
8.10E-01	7.30E-01	3.11E-01	6.50E-01
8.20E-01	7.30E-01	3.26E-01	6.53E-01
8.30E-01	7.30E-01	3.42E-01	6.57E-01
8.40E-01	7.30E-01	3.58E-01	6.60E-01
8.50E-01	7.30E-01	3.75E-01	6.63E-01
8.60E-01	7.30E-01	3.92E-01	6.67E-01
8.70E-01	7.30E-01	4.10E-01	6.70E-01
8.80E-01	7.30E-01	4.29E-01	6.74E-01
8.90E-01	7.30E-01	4.48E-01	6.77E-01
9.00E-01	7.30E-01	4.68E-01	6.81E-01
9.10E-01	7.30E-01	4.89E-01	6.85E-01
9.20E-01	7.30E-01	5.11E-01	6.89E-01
9.30E-01	7.30E-01	5.34E-01	6.93E-01
9.40E-01	7.30E-01	5.58E-01	6.97E-01
9.50E-01	7.30E-01	5.82E-01	7.02E-01
9.60E-01	7.30E-01	6.09E-01	7.06E-01
9.70E-01	7.30E-01	6.36E-01	7.11E-01
9.80E-01	7.30E-01	6.65E-01	7.16E-01
9.90E-01	7.30E-01	6.96E-01	7.22E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	7.40E-01	-2.50E-01	4.90E-01
1.00E-02	7.40E-01	-2.46E-01	4.92E-01
2.00E-02	7.40E-01	-2.43E-01	4.93E-01
3.00E-02	7.40E-01	-2.39E-01	4.95E-01
4.00E-02	7.40E-01	-2.36E-01	4.96E-01
5.00E-02	7.40E-01	-2.32E-01	4.98E-01
6.00E-02	7.40E-01	-2.28E-01	5.00E-01
7.00E-02	7.40E-01	-2.25E-01	5.01E-01
8.00E-02	7.40E-01	-2.21E-01	5.03E-01
9.00E-02	7.40E-01	-2.17E-01	5.04E-01
1.00E-01	7.40E-01	-2.13E-01	5.06E-01
1.10E-01	7.40E-01	-2.09E-01	5.08E-01
1.20E-01	7.40E-01	-2.05E-01	5.09E

α	θ	$\Phi(\alpha, \theta)$	τ
0.00E+00	7.50E-01	-2.50E-01	5.00E-01
1.00E-02	7.50E-01	-2.47E-01	5.02E-01
2.00E-02	7.50E-01	-2.43E-01	5.03E-01
3.00E-02	7.50E-01	-2.39E-01	5.05E-01
4.00E-02	7.50E-01	-2.36E-01	5.06E-01
5.00E-02	7.50E-01	-2.32E-01	5.08E-01
6.00E-02	7.50E-01	-2.29E-01	5.10E-01
7.00E-02	7.50E-01	-2.25E-01	5.11E-01
8.00E-02	7.50E-01	-2.21E-01	5.13E-01
9.00E-02	7.50E-01	-2.17E-01	5.15E-01
1.00E-01	7.50E-01	-2.13E-01	5.16E-01
1.10E-01	7.50E-01	-2.09E-01	5.18E-01
1.20E-01	7.50E-01	-2.06E-01	5.20E-01
1.30E-01	7.50E-01	-2.02E-01	5.21E-01
1.40E-01	7.50E-01	-1.97E-01	5.23E-01
1.50E-01	7.50E-01	-1.93E-01	5.25E-01
1.60E-01	7.50E-01	-1.89E-01	5.27E-01
1.70E-01	7.50E-01	-1.85E-01	5.28E-01
1.80E-01	7.50E-01	-1.81E-01	5.30E-01
1.90E-01	7.50E-01	-1.76E-01	5.32E-01
2.00E-01	7.50E-01	-1.72E-01	5.34E-01
2.10E-01	7.50E-01	-1.68E-01	5.36E-01
2.20E-01	7.50E-01	-1.63E-01	5.37E-01
2.30E-01	7.50E-01	-1.59E-01	5.39E-01
2.40E-01	7.50E-01	-1.54E-01	5.41E-01
2.50E-01	7.50E-01	-1.49E-01	5.43E-01
2.60E-01	7.50E-01	-1.45E-01	5.45E-01
2.70E-01	7.50E-01	-1.40E-01	5.47E-01
2.80E-01	7.50E-01	-1.35E-01	5.48E-01
2.90E-01	7.50E-01	-1.30E-01	5.50E-01
3.00E-01	7.50E-01	-1.25E-01	5.52E-01
3.10E-01	7.50E-01	-1.20E-01	5.54E-01
3.20E-01	7.50E-01	-1.15E-01	5.56E-01
3.30E-01	7.50E-01	-1.10E-01	5.58E-01
3.40E-01	7.50E-01	-1.04E-01	5.60E-01
3.50E-01	7.50E-01	-9.90E-02	5.62E-01
3.60E-01	7.50E-01	-9.36E-02	5.64E-01
3.70E-01	7.50E-01	-8.80E-02	5.66E-01
3.80E-01	7.50E-01	-8.24E-02	5.68E-01
3.90E-01	7.50E-01	-7.66E-02	5.70E-01
4.00E-01	7.50E-01	-7.08E-02	5.72E-01
4.10E-01	7.50E-01	-6.49E-02	5.74E-01
4.20E-01	7.50E-01	-5.88E-02	5.76E-01
4.30E-01	7.50E-01	-5.27E-02	5.78E-01
4.40E-01	7.50E-01	-4.65E-02	5.80E-01
4.50E-01	7.50E-01	-4.01E-02	5.83E-01
4.60E-01	7.50E-01	-3.37E-02	5.85E-01
4.70E-01	7.50E-01	-2.71E-02	5.87E-01
4.80E-01	7.50E-01	-2.04E-02	5.89E-01
4.90E-01	7.50E-01	-1.36E-02	5.91E-01
5.00E-01	7.50E-01	-6.64E-03	5.93E-01
5.10E-01	7.50E-01	4.37E-04	5.96E-01
5.20E-01	7.50E-01	7.66E-03	5.98E-01
5.30E-01	7.50E-01	1.50E-02	6.00E-01
5.40E-01	7.50E-01	2.25E-02	6.02E-01
5.50E-01	7.50E-01	3.02E-02	6.05E-01
5.60E-01	7.50E-01	3.80E-02	6.07E-01
5.70E-01	7.50E-01	4.60E-02	6.09E-01
5.80E-01	7.50E-01	5.41E-02	6.12E-01
5.90E-01	7.50E-01	6.25E-02	6.14E-01
6.00E-01	7.50E-01	7.10E-02	6.16E-01
6.10E-01	7.50E-01	7.97E-02	6.19E-01
6.20E-01	7.50E-01	8.86E-02	6.21E-01
6.30E-01	7.50E-01	9.77E-02	6.24E-01
6.40E-01	7.50E-01	1.07E-01	6.26E-01
6.50E-01	7.50E-01	1.17E-01	6.29E-01
6.60E-01	7.50E-01	1.26E-01	6.31E-01
6.70E-01	7.50E-01	1.36E-01	6.34E-01
6.80E-01	7.50E-01	1.47E-01	6.37E-01
6.90E-01	7.50E-01	1.57E-01	6.39E-01
7.00E-01	7.50E-01	1.68E-01	6.42E-01
7.10E-01	7.50E-01	1.79E-01	6.44E-01
7.20E-01	7.50E-01	1.91E-01	6.47E-01
7.30E-01	7.50E-01	2.02E-01	6.50E-01
7.40E-01	7.50E-01	2.14E-01	6.53E-01
7.50E-01	7.50E-01	2.27E-01	6.56E-01
7.60E-01	7.50E-01	2.40E-01	6.58E-01
7.70E-01	7.50E-01	2.53E-01	6.61E-01
7.80E-01	7.50E-01	2.67E-01	6.64E-01
7.90E-01	7.50E-01	2.81E-01	6.67E-01
8.00E-01	7.50E-01	2.95E-01	6.70E-01
8.10E-01	7.50E-01	3.10E-01	6.73E-01
8.20E-01	7.50E-01	3.26E-01	6.76E-01
8.30E-01	7.50E-01	3.42E-01	6.79E-01
8.40E-01	7.50E-01	3.58E-01	6.83E-01
8.50E-01	7.50E-01	3.76E-01	6.86E-01
8.60E-01	7.50E-01	3.93E-01	6.89E-01
8.70E-01	7.50E-01	4.12E-01	6.93E-01
8.80E-01	7.50E-01	4.31E-01	6.96E-01
8.90E-01	7.50E-01	4.51E-01	7.00E-01
9.00E-01	7.50E-01	4.72E-01	7.03E-01
9.10E-01	7.50E-01	4.94E-01	7.07E-01
9.20E-01	7.50E-01	5.17E-01	7.11E-01
9.30E-01	7.50E-01	5.41E-01	7.15E-01
9.40E-01	7.50E-01	5.66E-01	7.19E-01
9.50E-01	7.50E-01	5.93E-01	7.23E-01
9.60E-01	7.50E-01	6.20E-01	7.27E-01
9.70E-01	7.50E-01	6.50E-01	7.32E-01
9.80E-01	7.50E-01	6.81E-01	7.37E-01
9.90E-01	7.50E-01	7.14E-01	7.43E-01

α	θ	$\Phi(\alpha, \theta)$	τ
0.00E+00	7.60E-01	-2.50E-01	5.10E-01
1.00E-02	7.60E-01	-2.46E-01	5.12E-01
2.00E-02	7.60E-01	-2.43E-01	5.13E-01
3.00E-02	7.60E-01	-2.39E-01	5.15E-01
4.00E-02	7.60E-01	-2.36E-01	5.17E-01
5.00E-02	7.60E-01	-2.32E-01	5.18E-01
6.00E-02	7.60E-01	-2.28E-01	5.20E-01
7.00E-02	7.60E-01	-2.25E-01	5.22E-01
8.00E-02	7.60E-01	-2.21E-01	5.23E-01
9.00E-02	7.60E-01	-2.17E-01	5.25E-01
1.00E-01	7.60E-01	-2.13E-01	5.27E-01
1.10E-01	7.60E-01	-2.09E-01	5.29E-01
1.20E-01	7.60E-01	-2.06E-01	5.30E-01
1.30E-01	7.60E-01	-2.02E-01	5.32E-01
1.40E-01	7.60E-01	-1.98E-01	5.34E-01
1.50E-01	7.60E-01	-1.93E-01	5.36E-01
1.60E-01	7.60E-01	-1.89E-01	5.37E-01
1.70E-01	7.60E-01	-1.85E-01	5.39E-01
1.80E-01	7.60E-01	-1.81E-01	5.41E-01
1.90E-01	7.60E-01	-1.77E-01	5.43E-01
2.00E-01	7.60E-01	-1.72E-01	5.45E-01
2.10E-01	7.60E-01	-1.68E-01	5.46E-01
2.20E-01	7.60E-01	-1.63E-01	5.48E-01
2.30E-01	7.60E-01	-1.59E-01	5.50E-01
2.40E-01	7.60E-01	-1.54E-01	5.52E-01
2.50E-01	7.60E-01	-1.50E-01	5.54E-01
2.60E-01	7.60E-01	-1.45E-01	5.56E-01
2.70E-01	7.60E-01	-1.40E-01	5.58E-01
2.80E-01	7.60E-01	-1.35E-01	5.60E-01
2.90E-01	7.60E-01	-1.31E-01	5.62E-01
3.00E-01	7.60E-01	-1.26E-01	5.63E-01
3.10E-01	7.60E-01	-1.21E-01	5.65E-01
3.20E-01	7.60E-01	-1.15E-01	5.67E-01
3.30E-01	7.60E-01	-1.10E-01	5.69E-01
3.40E-01	7.60E-01	-1.05E-01	5.71E-01
3.50E-01	7.60E-01	-9.97E-02	5.73E-01
3.60E-01	7.60E-01	-9.42E-02	5.75E-01
3.70E-01	7.60E-01	-8.87E-02	5.77E-01
3.80E-01	7.60E-01	-8.31E-02	5.79E-01
3.90E-01	7.60E-01	-7.74E-02	5.81E-01
4.00E-01	7.60E-01	-7.16E-02	5.84E-01
4.10E-01	7.60E-01	-6.57E-02	5.86E-01
4.20E-01	7.60E-01	-5.97E-02	5.88E-01
4.30E-01	7.60E-01	-5.36E-02	5.90E-01
4.40E-01	7.60E-01	-4.74E-02	5.92E-01
4.50E-01	7.60E-01	-4.11E-02	5.94E-01
4.60E-01	7.60E-01	-3.47E-02	5.96E-01
4.70E-01	7.60E-01	-2.82E-02	5.98E-01
4.80E-01	7.60E-01	-2.15E-02	6.01E-01
4.90E-01	7.60E-01	-1.48E-02	6.03E-01
5.00E-01	7.60E-01	-7.85E-03	6.05E-01
5.10E-01	7.60E-01	-8.07E-04	6.07E-01
5.20E-01	7.60E-01	6.37E-03	6.10E-01
5.30E-01	7.60E-01	1.37E-02	6.12E-01
5.40E-01	7.60E-01	2.12E-02	6.14E-01
5.50E-01	7.60E-01	2.88E-02	6.16E-01
5.60E-01	7.60E-01	3.66E-02	6.19E-01
5.70E-01	7.60E-01	4.45E-02	6.21E-01
5.80E-01	7.60E-01	5.26E-02	6.23E-01
5.90E-01	7.60E-01	6.09E-02	6.26E-01
6.00E-01	7.60E-01	6.94E-02	6.28E-01
6.10E-01	7.60E-01	7.81E-02	6.31E-01
6.20E-01	7.60E-01	8.70E-02	6.33E-01
6.30E-01	7.60E-01	9.61E-02	6.36E-01
6.40E-01	7.60E-01	1.05E-01	6.38E-01
6.50E-01	7.60E-01	1.15E-01	6.41E-01
6.60E-01	7.60E-01	1.25E-01	6.43E-01
6.70E-01	7.60E-01	1.35E-01	6.46E-01
6.80E-01	7.60E-01	1.45E-01	6.48E-01
6.90E-01	7.60E-01	1.56E-01	6.51E-01
7.00E-01	7.60E-01	1.66E-01	6.54E-01
7.10E-01	7.60E-01	1.78E-01	6.56E-01
7.20E-01	7.60E-01	1.89E-01	6.59E-01
7.30E-01	7.60E-01	2.01E-01	6.62E-01
7.40E-01	7.60E-01	2.13E-01	6.64E-01
7.50E-01	7.60E-01	2.25E-01	6.67E-01
7.60E-01	7.60E-01	2.38E-01	6.70E-01
7.70E-01	7.60E-01	2.51E-01	6.73E-01
7.80E-01	7.60E-01	2.65E-01	6.76E-01
7.90E-01	7.60E-01	2.79E-01	6.79E-01
8.00E-01	7.60E-01	2.94E-01	6.82E-01
8.10E-01	7.60E-01	3.09E-01	6.85E-01
8.20E-01	7.60E-01	3.25E-01	6.88E-01
8.30E-01	7.60E-01	3.41E-01	6.91E-01
8.40E-01	7.60E-01	3.58E-01	6.94E-01
8.50E-01	7.60E-01	3.75E-01	6.97E-01
8.60E-01	7.60E-01	3.93E-01	7.01E-01
8.70E-01	7.60E-01	4.12E-01	7.04E-01
8.80E-01	7.60E-01	4.32E-01	7.07E-01
8.90E-01	7.60E-01	4.52E-01	7.11E-01
9.00E-01	7.60E-01	4.74E-01	7.14E-01
9.10E-01	7.60E-01	4.96E-01	7.18E-01
9.20E-01	7.60E-01	5.20E-01	7.22E-01
9.30E-01	7.60E-01	5.44E-01	7.26E-01
9.40E-01	7.60E-01	5.70E-01	7.30E-01
9.50E-01	7.60E-01	5.97E-01	7.34E-01
9.60E-01	7.60E-01	6.26E-01	7.38E-01
9.70E-01	7.60E-01	6.56E-01	7.43E-01
9.80E-01	7.60E-01	6.88E-01	7.48E-01
9.90E-01	7.60E-01	7.22E-01	7.53E-01

α	θ	$\Phi(\alpha, \theta)$	τ
0.00E+00	7.70E-01	-2.50E-01	5.20E-01
1.00E-02	7.70E-01	-2.46E-01	5.22E-01
2.00E-02	7.70E-01	-2.43E-01	5.24E-01
3.00E-02	7.70E-01	-2.39E-01	5.25E-01
4.00E-02	7.70E-01	-2.35E-01	5.27E-01
5.00E-02	7.70E-01	-2.32E-01	5.29E-01
6.00E-02	7.70E-01	-2.28E-01	5.31E-01
7.00E-02	7.70E-01	-2.25E-01	5.32E-01
8.00E-02	7.70E-01	-2.21E-01	5.34E-01
9.00E-02	7.70E-01	-2.17E-01	5.36E-01
1.00E-01	7.70E-01	-2.13E-01	5.38E-01
1.10E-01	7.70E-01	-2.09E-01	5.39E-01
1.20E-01	7.70E-01	-2.05E-01	5.

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	7.80E-01	-2.49E-01	5.31E-01
1.00E-02	7.80E-01	-2.46E-01	5.33E-01
2.00E-02	7.80E-01	-2.42E-01	5.34E-01
3.00E-02	7.80E-01	-2.39E-01	5.36E-01
4.00E-02	7.80E-01	-2.35E-01	5.38E-01
5.00E-02	7.80E-01	-2.31E-01	5.40E-01
6.00E-02	7.80E-01	-2.28E-01	5.41E-01
7.00E-02	7.80E-01	-2.24E-01	5.43E-01
8.00E-02	7.80E-01	-2.20E-01	5.45E-01
9.00E-02	7.80E-01	-2.17E-01	5.47E-01
1.00E-01	7.80E-01	-2.13E-01	5.49E-01
1.10E-01	7.80E-01	-2.09E-01	5.50E-01
1.20E-01	7.80E-01	-2.05E-01	5.52E-01
1.30E-01	7.80E-01	-2.01E-01	5.54E-01
1.40E-01	7.80E-01	-1.97E-01	5.56E-01
1.50E-01	7.80E-01	-1.93E-01	5.58E-01
1.60E-01	7.80E-01	-1.89E-01	5.60E-01
1.70E-01	7.80E-01	-1.85E-01	5.61E-01
1.80E-01	7.80E-01	-1.81E-01	5.63E-01
1.90E-01	7.80E-01	-1.77E-01	5.65E-01
2.00E-01	7.80E-01	-1.72E-01	5.67E-01
2.10E-01	7.80E-01	-1.68E-01	5.69E-01
2.20E-01	7.80E-01	-1.64E-01	5.71E-01
2.30E-01	7.80E-01	-1.59E-01	5.73E-01
2.40E-01	7.80E-01	-1.55E-01	5.75E-01
2.50E-01	7.80E-01	-1.50E-01	5.77E-01
2.60E-01	7.80E-01	-1.45E-01	5.79E-01
2.70E-01	7.80E-01	-1.41E-01	5.81E-01
2.80E-01	7.80E-01	-1.36E-01	5.83E-01
2.90E-01	7.80E-01	-1.31E-01	5.85E-01
3.00E-01	7.80E-01	-1.26E-01	5.87E-01
3.10E-01	7.80E-01	-1.21E-01	5.89E-01
3.20E-01	7.80E-01	-1.16E-01	5.91E-01
3.30E-01	7.80E-01	-1.11E-01	5.93E-01
3.40E-01	7.80E-01	-1.06E-01	5.95E-01
3.50E-01	7.80E-01	-1.01E-01	5.97E-01
3.60E-01	7.80E-01	-9.53E-02	5.99E-01
3.70E-01	7.80E-01	-8.99E-02	6.01E-01
3.80E-01	7.80E-01	-8.44E-02	6.03E-01
3.90E-01	7.80E-01	-7.88E-02	6.05E-01
4.00E-01	7.80E-01	-7.31E-02	6.07E-01
4.10E-01	7.80E-01	-6.73E-02	6.09E-01
4.20E-01	7.80E-01	-6.14E-02	6.11E-01
4.30E-01	7.80E-01	-5.54E-02	6.14E-01
4.40E-01	7.80E-01	-4.93E-02	6.16E-01
4.50E-01	7.80E-01	-4.31E-02	6.18E-01
4.60E-01	7.80E-01	-3.68E-02	6.20E-01
4.70E-01	7.80E-01	-3.04E-02	6.22E-01
4.80E-01	7.80E-01	-2.39E-02	6.24E-01
4.90E-01	7.80E-01	-1.72E-02	6.27E-01
5.00E-01	7.80E-01	-1.04E-02	6.29E-01
5.10E-01	7.80E-01	-3.45E-03	6.31E-01
5.20E-01	7.80E-01	3.62E-03	6.33E-01
5.30E-01	7.80E-01	1.08E-02	6.36E-01
5.40E-01	7.80E-01	1.82E-02	6.38E-01
5.50E-01	7.80E-01	2.57E-02	6.40E-01
5.60E-01	7.80E-01	3.34E-02	6.43E-01
5.70E-01	7.80E-01	4.12E-02	6.45E-01
5.80E-01	7.80E-01	4.92E-02	6.47E-01
5.90E-01	7.80E-01	5.74E-02	6.50E-01
6.00E-01	7.80E-01	6.58E-02	6.52E-01
6.10E-01	7.80E-01	7.44E-02	6.55E-01
6.20E-01	7.80E-01	8.32E-02	6.57E-01
6.30E-01	7.80E-01	9.22E-02	6.60E-01
6.40E-01	7.80E-01	1.01E-01	6.62E-01
6.50E-01	7.80E-01	1.11E-01	6.65E-01
6.60E-01	7.80E-01	1.21E-01	6.67E-01
6.70E-01	7.80E-01	1.31E-01	6.70E-01
6.80E-01	7.80E-01	1.41E-01	6.72E-01
6.90E-01	7.80E-01	1.51E-01	6.75E-01
7.00E-01	7.80E-01	1.62E-01	6.77E-01
7.10E-01	7.80E-01	1.73E-01	6.80E-01
7.20E-01	7.80E-01	1.85E-01	6.83E-01
7.30E-01	7.80E-01	1.96E-01	6.85E-01
7.40E-01	7.80E-01	2.09E-01	6.88E-01
7.50E-01	7.80E-01	2.21E-01	6.91E-01
7.60E-01	7.80E-01	2.34E-01	6.94E-01
7.70E-01	7.80E-01	2.47E-01	6.96E-01
7.80E-01	7.80E-01	2.61E-01	6.99E-01
7.90E-01	7.80E-01	2.75E-01	7.02E-01
8.00E-01	7.80E-01	2.90E-01	7.05E-01
8.10E-01	7.80E-01	3.06E-01	7.08E-01
8.20E-01	7.80E-01	3.21E-01	7.11E-01
8.30E-01	7.80E-01	3.38E-01	7.14E-01
8.40E-01	7.80E-01	3.55E-01	7.17E-01
8.50E-01	7.80E-01	3.73E-01	7.20E-01
8.60E-01	7.80E-01	3.92E-01	7.23E-01
8.70E-01	7.80E-01	4.11E-01	7.27E-01
8.80E-01	7.80E-01	4.31E-01	7.30E-01
8.90E-01	7.80E-01	4.53E-01	7.33E-01
9.00E-01	7.80E-01	4.75E-01	7.37E-01
9.10E-01	7.80E-01	4.98E-01	7.40E-01
9.20E-01	7.80E-01	5.23E-01	7.44E-01
9.30E-01	7.80E-01	5.49E-01	7.47E-01
9.40E-01	7.80E-01	5.76E-01	7.51E-01
9.50E-01	7.80E-01	6.05E-01	7.55E-01
9.60E-01	7.80E-01	6.35E-01	7.59E-01
9.70E-01	7.80E-01	6.68E-01	7.64E-01
9.80E-01	7.80E-01	7.02E-01	7.68E-01
9.90E-01	7.80E-01	7.39E-01	7.73E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	7.90E-01	-2.48E-01	5.42E-01
1.00E-02	7.90E-01	-2.45E-01	5.44E-01
2.00E-02	7.90E-01	-2.41E-01	5.45E-01
3.00E-02	7.90E-01	-2.38E-01	5.47E-01
4.00E-02	7.90E-01	-2.34E-01	5.49E-01
5.00E-02	7.90E-01	-2.31E-01	5.51E-01
6.00E-02	7.90E-01	-2.27E-01	5.52E-01
7.00E-02	7.90E-01	-2.23E-01	5.54E-01
8.00E-02	7.90E-01	-2.20E-01	5.56E-01
9.00E-02	7.90E-01	-2.16E-01	5.58E-01
1.00E-01	7.90E-01	-2.12E-01	5.60E-01
1.10E-01	7.90E-01	-2.08E-01	5.62E-01
1.20E-01	7.90E-01	-2.05E-01	5.63E-01
1.30E-01	7.90E-01	-2.01E-01	5.65E-01
1.40E-01	7.90E-01	-1.97E-01	5.67E-01
1.50E-01	7.90E-01	-1.93E-01	5.69E-01
1.60E-01	7.90E-01	-1.89E-01	5.71E-01
1.70E-01	7.90E-01	-1.85E-01	5.73E-01
1.80E-01	7.90E-01	-1.80E-01	5.75E-01
1.90E-01	7.90E-01	-1.76E-01	5.77E-01
2.00E-01	7.90E-01	-1.72E-01	5.79E-01
2.10E-01	7.90E-01	-1.68E-01	5.81E-01
2.20E-01	7.90E-01	-1.63E-01	5.83E-01
2.30E-01	7.90E-01	-1.59E-01	5.84E-01
2.40E-01	7.90E-01	-1.54E-01	5.86E-01
2.50E-01	7.90E-01	-1.50E-01	5.88E-01
2.60E-01	7.90E-01	-1.45E-01	5.90E-01
2.70E-01	7.90E-01	-1.41E-01	5.92E-01
2.80E-01	7.90E-01	-1.36E-01	5.94E-01
2.90E-01	7.90E-01	-1.31E-01	5.96E-01
3.00E-01	7.90E-01	-1.26E-01	5.98E-01
3.10E-01	7.90E-01	-1.21E-01	6.00E-01
3.20E-01	7.90E-01	-1.16E-01	6.02E-01
3.30E-01	7.90E-01	-1.11E-01	6.05E-01
3.40E-01	7.90E-01	-1.06E-01	6.07E-01
3.50E-01	7.90E-01	-1.01E-01	6.09E-01
3.60E-01	7.90E-01	-9.58E-02	6.11E-01
3.70E-01	7.90E-01	-9.04E-02	6.13E-01
3.80E-01	7.90E-01	-8.49E-02	6.15E-01
3.90E-01	7.90E-01	-7.94E-02	6.17E-01
4.00E-01	7.90E-01	-7.38E-02	6.19E-01
4.10E-01	7.90E-01	-6.80E-02	6.21E-01
4.20E-01	7.90E-01	-6.22E-02	6.24E-01
4.30E-01	7.90E-01	-5.63E-02	6.26E-01
4.40E-01	7.90E-01	-5.03E-02	6.28E-01
4.50E-01	7.90E-01	-4.41E-02	6.30E-01
4.60E-01	7.90E-01	-3.79E-02	6.32E-01
4.70E-01	7.90E-01	-3.15E-02	6.34E-01
4.80E-01	7.90E-01	-2.50E-02	6.37E-01
4.90E-01	7.90E-01	-1.84E-02	6.39E-01
5.00E-01	7.90E-01	-1.17E-02	6.41E-01
5.10E-01	7.90E-01	-4.85E-03	6.43E-01
5.20E-01	7.90E-01	2.14E-03	6.46E-01
5.30E-01	7.90E-01	9.28E-03	6.48E-01
5.40E-01	7.90E-01	1.66E-02	6.50E-01
5.50E-01	7.90E-01	2.40E-02	6.53E-01
5.60E-01	7.90E-01	3.16E-02	6.55E-01
5.70E-01	7.90E-01	3.94E-02	6.57E-01
5.80E-01	7.90E-01	4.73E-02	6.60E-01
5.90E-01	7.90E-01	5.54E-02	6.62E-01
6.00E-01	7.90E-01	6.38E-02	6.65E-01
6.10E-01	7.90E-01	7.23E-02	6.67E-01
6.20E-01	7.90E-01	8.10E-02	6.69E-01
6.30E-01	7.90E-01	8.99E-02	6.72E-01
6.40E-01	7.90E-01	9.91E-02	6.74E-01
6.50E-01	7.90E-01	1.08E-01	6.77E-01
6.60E-01	7.90E-01	1.18E-01	6.79E-01
6.70E-01	7.90E-01	1.28E-01	6.82E-01
6.80E-01	7.90E-01	1.38E-01	6.84E-01
6.90E-01	7.90E-01	1.49E-01	6.87E-01
7.00E-01	7.90E-01	1.59E-01	6.90E-01
7.10E-01	7.90E-01	1.70E-01	6.92E-01
7.20E-01	7.90E-01	1.82E-01	6.95E-01
7.30E-01	7.90E-01	1.94E-01	6.97E-01
7.40E-01	7.90E-01	2.06E-01	7.00E-01
7.50E-01	7.90E-01	2.18E-01	7.03E-01
7.60E-01	7.90E-01	2.31E-01	7.06E-01
7.70E-01	7.90E-01	2.45E-01	7.08E-01
7.80E-01	7.90E-01	2.58E-01	7.11E-01
7.90E-01	7.90E-01	2.73E-01	7.14E-01
8.00E-01	7.90E-01	2.88E-01	7.17E-01
8.10E-01	7.90E-01	3.03E-01	7.20E-01
8.20E-01	7.90E-01	3.19E-01	7.23E-01
8.30E-01	7.90E-01	3.36E-01	7.26E-01
8.40E-01	7.90E-01	3.53E-01	7.29E-01
8.50E-01	7.90E-01	3.71E-01	7.32E-01
8.60E-01	7.90E-01	3.90E-01	7.35E-01
8.70E-01	7.90E-01	4.10E-01	7.38E-01
8.80E-01	7.90E-01	4.30E-01	7.41E-01
8.90E-01	7.90E-01	4.52E-01	7.45E-01
9.00E-01	7.90E-01	4.75E-01	7.48E-01
9.10E-01	7.90E-01	4.98E-01	7.51E-01
9.20E-01	7.90E-01	5.23E-01	7.55E-01
9.30E-01	7.90E-01	5.50E-01	7.58E-01
9.40E-01	7.90E-01	5.78E-01	7.62E-01
9.50E-01	7.90E-01	6.08E-01	7.66E-01
9.60E-01	7.90E-01	6.39E-01	7.70E-01
9.70E-01	7.90E-01	6.73E-01	7.74E-01
9.80E-01	7.90E-01	7.09E-01	7.79E-01
9.90E-01	7.90E-01	7.47E-01	7.84E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	8.00E-01	-2.47E-01	5.53E-01
1.00E-02	8.00E-01	-2.44E-01	5.55E-01
2.00E-02	8.00E-01	-2.40E-01	5.56E-01
3.00E-02	8.00E-01	-2.37E-01	5.58E-01
4.00E-02	8.00E-01	-2.33E-01	5.60E-01
5.00E-02	8.00E-01	-2.30E-01	5.62E-01
6.00E-02	8.00E-01	-2.26E-01	5.64E-01
7.00E-02	8.00E-01	-2.23E-01	5.66E-01
8.00E-02	8.00E-01	-2.19E-01	5.67E-01
9.00E-02	8.00E-01	-2.15E-01	5.69E-01
1.00E-01	8.00E-01	-2.11E-01	5.71E-01
1.10E-01	8.00E-01	-2.08E-01	5.73E-01
1.20E-01	8.00E-01	-2.04E-01	5.75E

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	8.10E-01	-2.46E-01	5.64E-01
1.00E-02	8.10E-01	-2.42E-01	5.66E-01
2.00E-02	8.10E-01	-2.39E-01	5.68E-01
3.00E-02	8.10E-01	-2.36E-01	5.70E-01
4.00E-02	8.10E-01	-2.32E-01	5.72E-01
5.00E-02	8.10E-01	-2.29E-01	5.73E-01
6.00E-02	8.10E-01	-2.25E-01	5.75E-01
7.00E-02	8.10E-01	-2.21E-01	5.77E-01
8.00E-02	8.10E-01	-2.18E-01	5.79E-01
9.00E-02	8.10E-01	-2.14E-01	5.81E-01
1.00E-01	8.10E-01	-2.10E-01	5.83E-01
1.10E-01	8.10E-01	-2.07E-01	5.85E-01
1.20E-01	8.10E-01	-2.03E-01	5.87E-01
1.30E-01	8.10E-01	-1.99E-01	5.89E-01
1.40E-01	8.10E-01	-1.95E-01	5.91E-01
1.50E-01	8.10E-01	-1.91E-01	5.93E-01
1.60E-01	8.10E-01	-1.87E-01	5.95E-01
1.70E-01	8.10E-01	-1.83E-01	5.97E-01
1.80E-01	8.10E-01	-1.79E-01	5.99E-01
1.90E-01	8.10E-01	-1.75E-01	6.01E-01
2.00E-01	8.10E-01	-1.71E-01	6.03E-01
2.10E-01	8.10E-01	-1.67E-01	6.05E-01
2.20E-01	8.10E-01	-1.62E-01	6.07E-01
2.30E-01	8.10E-01	-1.58E-01	6.09E-01
2.40E-01	8.10E-01	-1.54E-01	6.11E-01
2.50E-01	8.10E-01	-1.49E-01	6.13E-01
2.60E-01	8.10E-01	-1.45E-01	6.15E-01
2.70E-01	8.10E-01	-1.40E-01	6.17E-01
2.80E-01	8.10E-01	-1.36E-01	6.19E-01
2.90E-01	8.10E-01	-1.31E-01	6.21E-01
3.00E-01	8.10E-01	-1.26E-01	6.23E-01
3.10E-01	8.10E-01	-1.21E-01	6.25E-01
3.20E-01	8.10E-01	-1.16E-01	6.27E-01
3.30E-01	8.10E-01	-1.12E-01	6.29E-01
3.40E-01	8.10E-01	-1.07E-01	6.31E-01
3.50E-01	8.10E-01	-1.01E-01	6.33E-01
3.60E-01	8.10E-01	-9.63E-02	6.35E-01
3.70E-01	8.10E-01	-9.11E-02	6.38E-01
3.80E-01	8.10E-01	-8.58E-02	6.40E-01
3.90E-01	8.10E-01	-8.04E-02	6.42E-01
4.00E-01	8.10E-01	-7.49E-02	6.44E-01
4.10E-01	8.10E-01	-6.93E-02	6.46E-01
4.20E-01	8.10E-01	-6.36E-02	6.48E-01
4.30E-01	8.10E-01	-5.79E-02	6.51E-01
4.40E-01	8.10E-01	-5.20E-02	6.53E-01
4.50E-01	8.10E-01	-4.60E-02	6.55E-01
4.60E-01	8.10E-01	-3.99E-02	6.57E-01
4.70E-01	8.10E-01	-3.38E-02	6.59E-01
4.80E-01	8.10E-01	-2.74E-02	6.62E-01
4.90E-01	8.10E-01	-2.10E-02	6.64E-01
5.00E-01	8.10E-01	-1.45E-02	6.66E-01
5.10E-01	8.10E-01	-7.79E-03	6.68E-01
5.20E-01	8.10E-01	-9.74E-04	6.71E-01
5.30E-01	8.10E-01	5.98E-03	6.73E-01
5.40E-01	8.10E-01	1.31E-02	6.75E-01
5.50E-01	8.10E-01	2.03E-02	6.78E-01
5.60E-01	8.10E-01	2.78E-02	6.80E-01
5.70E-01	8.10E-01	3.53E-02	6.82E-01
5.80E-01	8.10E-01	4.31E-02	6.85E-01
5.90E-01	8.10E-01	5.10E-02	6.87E-01
6.00E-01	8.10E-01	5.91E-02	6.89E-01
6.10E-01	8.10E-01	6.75E-02	6.92E-01
6.20E-01	8.10E-01	7.60E-02	6.94E-01
6.30E-01	8.10E-01	8.47E-02	6.97E-01
6.40E-01	8.10E-01	9.37E-02	6.99E-01
6.50E-01	8.10E-01	1.03E-01	7.02E-01
6.60E-01	8.10E-01	1.12E-01	7.04E-01
6.70E-01	8.10E-01	1.22E-01	7.07E-01
6.80E-01	8.10E-01	1.32E-01	7.09E-01
6.90E-01	8.10E-01	1.42E-01	7.12E-01
7.00E-01	8.10E-01	1.53E-01	7.14E-01
7.10E-01	8.10E-01	1.64E-01	7.17E-01
7.20E-01	8.10E-01	1.75E-01	7.19E-01
7.30E-01	8.10E-01	1.87E-01	7.22E-01
7.40E-01	8.10E-01	1.99E-01	7.25E-01
7.50E-01	8.10E-01	2.11E-01	7.27E-01
7.60E-01	8.10E-01	2.24E-01	7.30E-01
7.70E-01	8.10E-01	2.37E-01	7.33E-01
7.80E-01	8.10E-01	2.51E-01	7.35E-01
7.90E-01	8.10E-01	2.66E-01	7.38E-01
8.00E-01	8.10E-01	2.81E-01	7.41E-01
8.10E-01	8.10E-01	2.96E-01	7.44E-01
8.20E-01	8.10E-01	3.12E-01	7.46E-01
8.30E-01	8.10E-01	3.29E-01	7.49E-01
8.40E-01	8.10E-01	3.47E-01	7.52E-01
8.50E-01	8.10E-01	3.65E-01	7.55E-01
8.60E-01	8.10E-01	3.84E-01	7.58E-01
8.70E-01	8.10E-01	4.05E-01	7.61E-01
8.80E-01	8.10E-01	4.26E-01	7.64E-01
8.90E-01	8.10E-01	4.48E-01	7.67E-01
9.00E-01	8.10E-01	4.72E-01	7.71E-01
9.10E-01	8.10E-01	4.96E-01	7.74E-01
9.20E-01	8.10E-01	5.23E-01	7.77E-01
9.30E-01	8.10E-01	5.51E-01	7.80E-01
9.40E-01	8.10E-01	5.80E-01	7.84E-01
9.50E-01	8.10E-01	6.12E-01	7.88E-01
9.60E-01	8.10E-01	6.46E-01	7.91E-01
9.70E-01	8.10E-01	6.82E-01	7.95E-01
9.80E-01	8.10E-01	7.21E-01	8.00E-01
9.90E-01	8.10E-01	7.63E-01	8.04E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	8.20E-01	-2.44E-01	5.76E-01
1.00E-02	8.20E-01	-2.41E-01	5.78E-01
2.00E-02	8.20E-01	-2.37E-01	5.80E-01
3.00E-02	8.20E-01	-2.34E-01	5.81E-01
4.00E-02	8.20E-01	-2.31E-01	5.83E-01
5.00E-02	8.20E-01	-2.27E-01	5.85E-01
6.00E-02	8.20E-01	-2.23E-01	5.87E-01
7.00E-02	8.20E-01	-2.20E-01	5.89E-01
8.00E-02	8.20E-01	-2.16E-01	5.91E-01
9.00E-02	8.20E-01	-2.13E-01	5.93E-01
1.00E-01	8.20E-01	-2.09E-01	5.95E-01
1.10E-01	8.20E-01	-2.05E-01	5.97E-01
1.20E-01	8.20E-01	-2.01E-01	5.99E-01
1.30E-01	8.20E-01	-1.98E-01	6.01E-01
1.40E-01	8.20E-01	-1.94E-01	6.03E-01
1.50E-01	8.20E-01	-1.90E-01	6.05E-01
1.60E-01	8.20E-01	-1.86E-01	6.07E-01
1.70E-01	8.20E-01	-1.82E-01	6.09E-01
1.80E-01	8.20E-01	-1.78E-01	6.11E-01
1.90E-01	8.20E-01	-1.74E-01	6.13E-01
2.00E-01	8.20E-01	-1.70E-01	6.15E-01
2.10E-01	8.20E-01	-1.66E-01	6.17E-01
2.20E-01	8.20E-01	-1.61E-01	6.19E-01
2.30E-01	8.20E-01	-1.57E-01	6.21E-01
2.40E-01	8.20E-01	-1.53E-01	6.23E-01
2.50E-01	8.20E-01	-1.48E-01	6.25E-01
2.60E-01	8.20E-01	-1.44E-01	6.27E-01
2.70E-01	8.20E-01	-1.40E-01	6.29E-01
2.80E-01	8.20E-01	-1.35E-01	6.31E-01
2.90E-01	8.20E-01	-1.30E-01	6.33E-01
3.00E-01	8.20E-01	-1.26E-01	6.35E-01
3.10E-01	8.20E-01	-1.21E-01	6.38E-01
3.20E-01	8.20E-01	-1.16E-01	6.40E-01
3.30E-01	8.20E-01	-1.11E-01	6.42E-01
3.40E-01	8.20E-01	-1.06E-01	6.44E-01
3.50E-01	8.20E-01	-1.01E-01	6.46E-01
3.60E-01	8.20E-01	-9.64E-02	6.48E-01
3.70E-01	8.20E-01	-9.13E-02	6.50E-01
3.80E-01	8.20E-01	-8.60E-02	6.52E-01
3.90E-01	8.20E-01	-8.07E-02	6.55E-01
4.00E-01	8.20E-01	-7.53E-02	6.57E-01
4.10E-01	8.20E-01	-6.98E-02	6.59E-01
4.20E-01	8.20E-01	-6.42E-02	6.61E-01
4.30E-01	8.20E-01	-5.86E-02	6.63E-01
4.40E-01	8.20E-01	-5.28E-02	6.66E-01
4.50E-01	8.20E-01	-4.69E-02	6.68E-01
4.60E-01	8.20E-01	-4.09E-02	6.70E-01
4.70E-01	8.20E-01	-3.49E-02	6.72E-01
4.80E-01	8.20E-01	-2.87E-02	6.75E-01
4.90E-01	8.20E-01	-2.23E-02	6.77E-01
5.00E-01	8.20E-01	-1.59E-02	6.79E-01
5.10E-01	8.20E-01	-9.32E-03	6.81E-01
5.20E-01	8.20E-01	-2.61E-03	6.84E-01
5.30E-01	8.20E-01	4.23E-03	6.86E-01
5.40E-01	8.20E-01	1.12E-02	6.88E-01
5.50E-01	8.20E-01	1.84E-02	6.90E-01
5.60E-01	8.20E-01	2.57E-02	6.93E-01
5.70E-01	8.20E-01	3.31E-02	6.95E-01
5.80E-01	8.20E-01	4.07E-02	6.97E-01
5.90E-01	8.20E-01	4.86E-02	7.00E-01
6.00E-01	8.20E-01	5.66E-02	7.02E-01
6.10E-01	8.20E-01	6.48E-02	7.05E-01
6.20E-01	8.20E-01	7.32E-02	7.07E-01
6.30E-01	8.20E-01	8.18E-02	7.09E-01
6.40E-01	8.20E-01	9.06E-02	7.12E-01
6.50E-01	8.20E-01	9.97E-02	7.14E-01
6.60E-01	8.20E-01	1.09E-01	7.17E-01
6.70E-01	8.20E-01	1.19E-01	7.19E-01
6.80E-01	8.20E-01	1.29E-01	7.22E-01
6.90E-01	8.20E-01	1.39E-01	7.24E-01
7.00E-01	8.20E-01	1.49E-01	7.27E-01
7.10E-01	8.20E-01	1.60E-01	7.29E-01
7.20E-01	8.20E-01	1.71E-01	7.32E-01
7.30E-01	8.20E-01	1.83E-01	7.34E-01
7.40E-01	8.20E-01	1.95E-01	7.37E-01
7.50E-01	8.20E-01	2.07E-01	7.40E-01
7.60E-01	8.20E-01	2.20E-01	7.42E-01
7.70E-01	8.20E-01	2.33E-01	7.45E-01
7.80E-01	8.20E-01	2.47E-01	7.47E-01
7.90E-01	8.20E-01	2.61E-01	7.50E-01
8.00E-01	8.20E-01	2.76E-01	7.53E-01
8.10E-01	8.20E-01	2.92E-01	7.56E-01
8.20E-01	8.20E-01	3.08E-01	7.58E-01
8.30E-01	8.20E-01	3.25E-01	7.61E-01
8.40E-01	8.20E-01	3.42E-01	7.64E-01
8.50E-01	8.20E-01	3.61E-01	7.67E-01
8.60E-01	8.20E-01	3.80E-01	7.70E-01
8.70E-01	8.20E-01	4.01E-01	7.73E-01
8.80E-01	8.20E-01	4.22E-01	7.76E-01
8.90E-01	8.20E-01	4.45E-01	7.79E-01
9.00E-01	8.20E-01	4.69E-01	7.82E-01
9.10E-01	8.20E-01	4.94E-01	7.85E-01
9.20E-01	8.20E-01	5.21E-01	7.88E-01
9.30E-01	8.20E-01	5.50E-01	7.92E-01
9.40E-01	8.20E-01	5.80E-01	7.95E-01
9.50E-01	8.20E-01	6.13E-01	7.98E-01
9.60E-01	8.20E-01	6.48E-01	8.02E-01
9.70E-01	8.20E-01	6.86E-01	8.06E-01
9.80E-01	8.20E-01	7.26E-01	8.10E-01
9.90E-01	8.20E-01	7.71E-01	8.14E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	8.30E-01	-2.42E-01	5.88E-01
1.00E-02	8.30E-01	-2.39E-01	5.90E-01
2.00E-02	8.30E-01	-2.36E-01	5.92E-01
3.00E-02	8.30E-01	-2.32E-01	5.94E-01
4.00E-02	8.30E-01	-2.29E-01	5.95E-01
5.00E-02	8.30E-01	-2.25E-01	5.97E-01
6.00E-02	8.30E-01	-2.22E-01	5.99E-01
7.00E-02	8.30E-01	-2.18E-01	6.01E-01
8.00E-02	8.30E-01	-2.15E-01	6.03E-01
9.00E-02	8.30E-01	-2.11E-01	6.05E-01
1.00E-01	8.30E-01	-2.07E-01	6.07E-01
1.10E-01	8.30E-01	-2.04E-01	6.09E-01
1.20E-01	8.30E-01	-2.00E-01	6.11E-0

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	8.40E-01	-2.40E-01	6.00E-01
1.00E-02	8.40E-01	-2.37E-01	6.02E-01
2.00E-02	8.40E-01	-2.33E-01	6.04E-01
3.00E-02	8.40E-01	-2.30E-01	6.06E-01
4.00E-02	8.40E-01	-2.26E-01	6.08E-01
5.00E-02	8.40E-01	-2.23E-01	6.10E-01
6.00E-02	8.40E-01	-2.20E-01	6.12E-01
7.00E-02	8.40E-01	-2.16E-01	6.14E-01
8.00E-02	8.40E-01	-2.12E-01	6.16E-01
9.00E-02	8.40E-01	-2.09E-01	6.18E-01
1.00E-01	8.40E-01	-2.05E-01	6.20E-01
1.10E-01	8.40E-01	-2.02E-01	6.22E-01
1.20E-01	8.40E-01	-1.98E-01	6.24E-01
1.30E-01	8.40E-01	-1.94E-01	6.26E-01
1.40E-01	8.40E-01	-1.90E-01	6.28E-01
1.50E-01	8.40E-01	-1.87E-01	6.30E-01
1.60E-01	8.40E-01	-1.83E-01	6.32E-01
1.70E-01	8.40E-01	-1.79E-01	6.34E-01
1.80E-01	8.40E-01	-1.75E-01	6.36E-01
1.90E-01	8.40E-01	-1.71E-01	6.39E-01
2.00E-01	8.40E-01	-1.67E-01	6.41E-01
2.10E-01	8.40E-01	-1.63E-01	6.43E-01
2.20E-01	8.40E-01	-1.59E-01	6.45E-01
2.30E-01	8.40E-01	-1.55E-01	6.47E-01
2.40E-01	8.40E-01	-1.51E-01	6.49E-01
2.50E-01	8.40E-01	-1.46E-01	6.51E-01
2.60E-01	8.40E-01	-1.42E-01	6.53E-01
2.70E-01	8.40E-01	-1.38E-01	6.55E-01
2.80E-01	8.40E-01	-1.33E-01	6.57E-01
2.90E-01	8.40E-01	-1.29E-01	6.59E-01
3.00E-01	8.40E-01	-1.24E-01	6.62E-01
3.10E-01	8.40E-01	-1.20E-01	6.64E-01
3.20E-01	8.40E-01	-1.15E-01	6.66E-01
3.30E-01	8.40E-01	-1.11E-01	6.68E-01
3.40E-01	8.40E-01	-1.06E-01	6.70E-01
3.50E-01	8.40E-01	-1.01E-01	6.72E-01
3.60E-01	8.40E-01	-9.62E-02	6.74E-01
3.70E-01	8.40E-01	-9.12E-02	6.77E-01
3.80E-01	8.40E-01	-8.62E-02	6.79E-01
3.90E-01	8.40E-01	-8.11E-02	6.81E-01
4.00E-01	8.40E-01	-7.59E-02	6.83E-01
4.10E-01	8.40E-01	-7.06E-02	6.85E-01
4.20E-01	8.40E-01	-6.52E-02	6.88E-01
4.30E-01	8.40E-01	-5.98E-02	6.90E-01
4.40E-01	8.40E-01	-5.42E-02	6.92E-01
4.50E-01	8.40E-01	-4.86E-02	6.94E-01
4.60E-01	8.40E-01	-4.28E-02	6.96E-01
4.70E-01	8.40E-01	-3.70E-02	6.99E-01
4.80E-01	8.40E-01	-3.10E-02	7.01E-01
4.90E-01	8.40E-01	-2.50E-02	7.03E-01
5.00E-01	8.40E-01	-1.88E-02	7.05E-01
5.10E-01	8.40E-01	-1.25E-02	7.08E-01
5.20E-01	8.40E-01	-6.03E-03	7.10E-01
5.30E-01	8.40E-01	5.43E-04	7.12E-01
5.40E-01	8.40E-01	7.26E-03	7.14E-01
5.50E-01	8.40E-01	1.41E-02	7.17E-01
5.60E-01	8.40E-01	2.11E-02	7.19E-01
5.70E-01	8.40E-01	2.83E-02	7.21E-01
5.80E-01	8.40E-01	3.56E-02	7.24E-01
5.90E-01	8.40E-01	4.32E-02	7.26E-01
6.00E-01	8.40E-01	5.09E-02	7.28E-01
6.10E-01	8.40E-01	5.88E-02	7.31E-01
6.20E-01	8.40E-01	6.69E-02	7.33E-01
6.30E-01	8.40E-01	7.52E-02	7.35E-01
6.40E-01	8.40E-01	8.37E-02	7.38E-01
6.50E-01	8.40E-01	9.25E-02	7.40E-01
6.60E-01	8.40E-01	1.02E-01	7.42E-01
6.70E-01	8.40E-01	1.11E-01	7.45E-01
6.80E-01	8.40E-01	1.20E-01	7.47E-01
6.90E-01	8.40E-01	1.30E-01	7.50E-01
7.00E-01	8.40E-01	1.40E-01	7.52E-01
7.10E-01	8.40E-01	1.51E-01	7.55E-01
7.20E-01	8.40E-01	1.62E-01	7.57E-01
7.30E-01	8.40E-01	1.73E-01	7.60E-01
7.40E-01	8.40E-01	1.85E-01	7.62E-01
7.50E-01	8.40E-01	1.97E-01	7.65E-01
7.60E-01	8.40E-01	2.10E-01	7.67E-01
7.70E-01	8.40E-01	2.23E-01	7.70E-01
7.80E-01	8.40E-01	2.36E-01	7.72E-01
7.90E-01	8.40E-01	2.50E-01	7.75E-01
8.00E-01	8.40E-01	2.65E-01	7.77E-01
8.10E-01	8.40E-01	2.81E-01	7.80E-01
8.20E-01	8.40E-01	2.97E-01	7.83E-01
8.30E-01	8.40E-01	3.14E-01	7.85E-01
8.40E-01	8.40E-01	3.31E-01	7.88E-01
8.50E-01	8.40E-01	3.50E-01	7.91E-01
8.60E-01	8.40E-01	3.70E-01	7.93E-01
8.70E-01	8.40E-01	3.91E-01	7.96E-01
8.80E-01	8.40E-01	4.13E-01	7.99E-01
8.90E-01	8.40E-01	4.36E-01	8.02E-01
9.00E-01	8.40E-01	4.61E-01	8.05E-01
9.10E-01	8.40E-01	4.87E-01	8.08E-01
9.20E-01	8.40E-01	5.15E-01	8.11E-01
9.30E-01	8.40E-01	5.45E-01	8.14E-01
9.40E-01	8.40E-01	5.77E-01	8.17E-01
9.50E-01	8.40E-01	6.12E-01	8.20E-01
9.60E-01	8.40E-01	6.50E-01	8.24E-01
9.70E-01	8.40E-01	6.91E-01	8.27E-01
9.80E-01	8.40E-01	7.36E-01	8.31E-01
9.90E-01	8.40E-01	7.85E-01	8.35E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	8.50E-01	-2.37E-01	6.13E-01
1.00E-02	8.50E-01	-2.34E-01	6.15E-01
2.00E-02	8.50E-01	-2.31E-01	6.17E-01
3.00E-02	8.50E-01	-2.27E-01	6.19E-01
4.00E-02	8.50E-01	-2.24E-01	6.21E-01
5.00E-02	8.50E-01	-2.20E-01	6.23E-01
6.00E-02	8.50E-01	-2.17E-01	6.25E-01
7.00E-02	8.50E-01	-2.14E-01	6.27E-01
8.00E-02	8.50E-01	-2.10E-01	6.29E-01
9.00E-02	8.50E-01	-2.06E-01	6.31E-01
1.00E-01	8.50E-01	-2.03E-01	6.33E-01
1.10E-01	8.50E-01	-1.99E-01	6.35E-01
1.20E-01	8.50E-01	-1.96E-01	6.37E-01
1.30E-01	8.50E-01	-1.92E-01	6.39E-01
1.40E-01	8.50E-01	-1.88E-01	6.41E-01
1.50E-01	8.50E-01	-1.85E-01	6.44E-01
1.60E-01	8.50E-01	-1.81E-01	6.46E-01
1.70E-01	8.50E-01	-1.77E-01	6.48E-01
1.80E-01	8.50E-01	-1.73E-01	6.50E-01
1.90E-01	8.50E-01	-1.69E-01	6.52E-01
2.00E-01	8.50E-01	-1.65E-01	6.54E-01
2.10E-01	8.50E-01	-1.61E-01	6.56E-01
2.20E-01	8.50E-01	-1.57E-01	6.58E-01
2.30E-01	8.50E-01	-1.53E-01	6.60E-01
2.40E-01	8.50E-01	-1.49E-01	6.62E-01
2.50E-01	8.50E-01	-1.45E-01	6.65E-01
2.60E-01	8.50E-01	-1.41E-01	6.67E-01
2.70E-01	8.50E-01	-1.37E-01	6.69E-01
2.80E-01	8.50E-01	-1.32E-01	6.71E-01
2.90E-01	8.50E-01	-1.28E-01	6.73E-01
3.00E-01	8.50E-01	-1.24E-01	6.75E-01
3.10E-01	8.50E-01	-1.19E-01	6.77E-01
3.20E-01	8.50E-01	-1.15E-01	6.79E-01
3.30E-01	8.50E-01	-1.10E-01	6.82E-01
3.40E-01	8.50E-01	-1.05E-01	6.84E-01
3.50E-01	8.50E-01	-1.01E-01	6.86E-01
3.60E-01	8.50E-01	-9.58E-02	6.88E-01
3.70E-01	8.50E-01	-9.09E-02	6.90E-01
3.80E-01	8.50E-01	-8.60E-02	6.92E-01
3.90E-01	8.50E-01	-8.10E-02	6.95E-01
4.00E-01	8.50E-01	-7.59E-02	6.97E-01
4.10E-01	8.50E-01	-7.08E-02	6.99E-01
4.20E-01	8.50E-01	-6.56E-02	7.01E-01
4.30E-01	8.50E-01	-6.02E-02	7.03E-01
4.40E-01	8.50E-01	-5.48E-02	7.06E-01
4.50E-01	8.50E-01	-4.93E-02	7.08E-01
4.60E-01	8.50E-01	-4.37E-02	7.10E-01
4.70E-01	8.50E-01	-3.80E-02	7.12E-01
4.80E-01	8.50E-01	-3.22E-02	7.14E-01
4.90E-01	8.50E-01	-2.63E-02	7.17E-01
5.00E-01	8.50E-01	-2.02E-02	7.19E-01
5.10E-01	8.50E-01	-1.41E-02	7.21E-01
5.20E-01	8.50E-01	-7.79E-03	7.23E-01
5.30E-01	8.50E-01	-1.38E-03	7.26E-01
5.40E-01	8.50E-01	5.17E-03	7.28E-01
5.50E-01	8.50E-01	1.19E-02	7.30E-01
5.60E-01	8.50E-01	1.87E-02	7.32E-01
5.70E-01	8.50E-01	2.57E-02	7.35E-01
5.80E-01	8.50E-01	3.29E-02	7.37E-01
5.90E-01	8.50E-01	4.02E-02	7.39E-01
6.00E-01	8.50E-01	4.77E-02	7.42E-01
6.10E-01	8.50E-01	5.55E-02	7.44E-01
6.20E-01	8.50E-01	6.34E-02	7.46E-01
6.30E-01	8.50E-01	7.15E-02	7.49E-01
6.40E-01	8.50E-01	7.98E-02	7.51E-01
6.50E-01	8.50E-01	8.84E-02	7.53E-01
6.60E-01	8.50E-01	9.73E-02	7.56E-01
6.70E-01	8.50E-01	1.06E-01	7.58E-01
6.80E-01	8.50E-01	1.16E-01	7.60E-01
6.90E-01	8.50E-01	1.25E-01	7.63E-01
7.00E-01	8.50E-01	1.35E-01	7.65E-01
7.10E-01	8.50E-01	1.46E-01	7.68E-01
7.20E-01	8.50E-01	1.57E-01	7.70E-01
7.30E-01	8.50E-01	1.68E-01	7.72E-01
7.40E-01	8.50E-01	1.79E-01	7.75E-01
7.50E-01	8.50E-01	1.91E-01	7.77E-01
7.60E-01	8.50E-01	2.03E-01	7.80E-01
7.70E-01	8.50E-01	2.16E-01	7.82E-01
7.80E-01	8.50E-01	2.30E-01	7.85E-01
7.90E-01	8.50E-01	2.44E-01	7.87E-01
8.00E-01	8.50E-01	2.58E-01	7.90E-01
8.10E-01	8.50E-01	2.74E-01	7.92E-01
8.20E-01	8.50E-01	2.90E-01	7.95E-01
8.30E-01	8.50E-01	3.07E-01	7.97E-01
8.40E-01	8.50E-01	3.24E-01	8.00E-01
8.50E-01	8.50E-01	3.43E-01	8.03E-01
8.60E-01	8.50E-01	3.63E-01	8.05E-01
8.70E-01	8.50E-01	3.84E-01	8.08E-01
8.80E-01	8.50E-01	4.06E-01	8.11E-01
8.90E-01	8.50E-01	4.30E-01	8.13E-01
9.00E-01	8.50E-01	4.55E-01	8.16E-01
9.10E-01	8.50E-01	4.81E-01	8.19E-01
9.20E-01	8.50E-01	5.10E-01	8.22E-01
9.30E-01	8.50E-01	5.41E-01	8.25E-01
9.40E-01	8.50E-01	5.74E-01	8.28E-01
9.50E-01	8.50E-01	6.10E-01	8.31E-01
9.60E-01	8.50E-01	6.50E-01	8.34E-01
9.70E-01	8.50E-01	6.92E-01	8.38E-01
9.80E-01	8.50E-01	7.39E-01	8.41E-01
9.90E-01	8.50E-01	7.92E-01	8.45E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	8.60E-01	-2.34E-01	6.26E-01
1.00E-02	8.60E-01	-2.31E-01	6.28E-01
2.00E-02	8.60E-01	-2.28E-01	6.30E-01
3.00E-02	8.60E-01	-2.24E-01	6.32E-01
4.00E-02	8.60E-01	-2.21E-01	6.34E-01
5.00E-02	8.60E-01	-2.17E-01	6.36E-01
6.00E-02	8.60E-01	-2.14E-01	6.38E-01
7.00E-02	8.60E-01	-2.11E-01	6.40E-01
8.00E-02	8.60E-01	-2.07E-01	6.42E-01
9.00E-02	8.60E-01	-2.04E-01	6.45E-01
1.00E-01	8.60E-01	-2.00E-01	6.47E-01
1.10E-01	8.60E-01	-1.97E-01	6.49E-01
1.20E-01	8.60E-01	-1.93E-01	6.51E-0

α	θ	$\Phi(\alpha, \theta)$	τ
0.00E+00	8.70E-01	-2.31E-01	6.39E-01
1.00E-02	8.70E-01	-2.27E-01	6.42E-01
2.00E-02	8.70E-01	-2.24E-01	6.44E-01
3.00E-02	8.70E-01	-2.21E-01	6.46E-01
4.00E-02	8.70E-01	-2.17E-01	6.48E-01
5.00E-02	8.70E-01	-2.14E-01	6.50E-01
6.00E-02	8.70E-01	-2.11E-01	6.52E-01
7.00E-02	8.70E-01	-2.07E-01	6.54E-01
8.00E-02	8.70E-01	-2.04E-01	6.56E-01
9.00E-02	8.70E-01	-2.00E-01	6.58E-01
1.00E-01	8.70E-01	-1.97E-01	6.61E-01
1.10E-01	8.70E-01	-1.94E-01	6.63E-01
1.20E-01	8.70E-01	-1.90E-01	6.65E-01
1.30E-01	8.70E-01	-1.86E-01	6.67E-01
1.40E-01	8.70E-01	-1.83E-01	6.69E-01
1.50E-01	8.70E-01	-1.79E-01	6.71E-01
1.60E-01	8.70E-01	-1.76E-01	6.73E-01
1.70E-01	8.70E-01	-1.72E-01	6.76E-01
1.80E-01	8.70E-01	-1.68E-01	6.78E-01
1.90E-01	8.70E-01	-1.64E-01	6.80E-01
2.00E-01	8.70E-01	-1.61E-01	6.82E-01
2.10E-01	8.70E-01	-1.57E-01	6.84E-01
2.20E-01	8.70E-01	-1.53E-01	6.86E-01
2.30E-01	8.70E-01	-1.49E-01	6.88E-01
2.40E-01	8.70E-01	-1.45E-01	6.90E-01
2.50E-01	8.70E-01	-1.41E-01	6.93E-01
2.60E-01	8.70E-01	-1.37E-01	6.95E-01
2.70E-01	8.70E-01	-1.33E-01	6.97E-01
2.80E-01	8.70E-01	-1.29E-01	6.99E-01
2.90E-01	8.70E-01	-1.25E-01	7.01E-01
3.00E-01	8.70E-01	-1.21E-01	7.03E-01
3.10E-01	8.70E-01	-1.16E-01	7.06E-01
3.20E-01	8.70E-01	-1.12E-01	7.08E-01
3.30E-01	8.70E-01	-1.08E-01	7.10E-01
3.40E-01	8.70E-01	-1.03E-01	7.12E-01
3.50E-01	8.70E-01	-9.89E-02	7.14E-01
3.60E-01	8.70E-01	-9.44E-02	7.16E-01
3.70E-01	8.70E-01	-8.98E-02	7.18E-01
3.80E-01	8.70E-01	-8.52E-02	7.21E-01
3.90E-01	8.70E-01	-8.04E-02	7.23E-01
4.00E-01	8.70E-01	-7.56E-02	7.25E-01
4.10E-01	8.70E-01	-7.08E-02	7.27E-01
4.20E-01	8.70E-01	-6.58E-02	7.29E-01
4.30E-01	8.70E-01	-6.08E-02	7.32E-01
4.40E-01	8.70E-01	-5.57E-02	7.34E-01
4.50E-01	8.70E-01	-5.05E-02	7.36E-01
4.60E-01	8.70E-01	-4.52E-02	7.38E-01
4.70E-01	8.70E-01	-3.98E-02	7.40E-01
4.80E-01	8.70E-01	-3.43E-02	7.42E-01
4.90E-01	8.70E-01	-2.88E-02	7.45E-01
5.00E-01	8.70E-01	-2.31E-02	7.47E-01
5.10E-01	8.70E-01	-1.73E-02	7.49E-01
5.20E-01	8.70E-01	-1.14E-02	7.51E-01
5.30E-01	8.70E-01	-5.34E-03	7.53E-01
5.40E-01	8.70E-01	8.30E-04	7.56E-01
5.50E-01	8.70E-01	7.13E-03	7.58E-01
5.60E-01	8.70E-01	1.36E-02	7.60E-01
5.70E-01	8.70E-01	2.02E-02	7.62E-01
5.80E-01	8.70E-01	2.69E-02	7.65E-01
5.90E-01	8.70E-01	3.38E-02	7.67E-01
6.00E-01	8.70E-01	4.09E-02	7.69E-01
6.10E-01	8.70E-01	4.82E-02	7.71E-01
6.20E-01	8.70E-01	5.57E-02	7.73E-01
6.30E-01	8.70E-01	6.33E-02	7.76E-01
6.40E-01	8.70E-01	7.12E-02	7.78E-01
6.50E-01	8.70E-01	7.94E-02	7.80E-01
6.60E-01	8.70E-01	8.77E-02	7.82E-01
6.70E-01	8.70E-01	9.64E-02	7.85E-01
6.80E-01	8.70E-01	1.05E-01	7.87E-01
6.90E-01	8.70E-01	1.14E-01	7.89E-01
7.00E-01	8.70E-01	1.24E-01	7.92E-01
7.10E-01	8.70E-01	1.34E-01	7.94E-01
7.20E-01	8.70E-01	1.44E-01	7.96E-01
7.30E-01	8.70E-01	1.55E-01	7.98E-01
7.40E-01	8.70E-01	1.66E-01	8.01E-01
7.50E-01	8.70E-01	1.77E-01	8.03E-01
7.60E-01	8.70E-01	1.89E-01	8.05E-01
7.70E-01	8.70E-01	2.02E-01	8.08E-01
7.80E-01	8.70E-01	2.15E-01	8.10E-01
7.90E-01	8.70E-01	2.28E-01	8.12E-01
8.00E-01	8.70E-01	2.42E-01	8.15E-01
8.10E-01	8.70E-01	2.57E-01	8.17E-01
8.20E-01	8.70E-01	2.73E-01	8.20E-01
8.30E-01	8.70E-01	2.90E-01	8.22E-01
8.40E-01	8.70E-01	3.07E-01	8.24E-01
8.50E-01	8.70E-01	3.26E-01	8.27E-01
8.60E-01	8.70E-01	3.46E-01	8.29E-01
8.70E-01	8.70E-01	3.67E-01	8.32E-01
8.80E-01	8.70E-01	3.89E-01	8.34E-01
8.90E-01	8.70E-01	4.13E-01	8.37E-01
9.00E-01	8.70E-01	4.39E-01	8.39E-01
9.10E-01	8.70E-01	4.66E-01	8.42E-01
9.20E-01	8.70E-01	4.96E-01	8.45E-01
9.30E-01	8.70E-01	5.28E-01	8.47E-01
9.40E-01	8.70E-01	5.64E-01	8.50E-01
9.50E-01	8.70E-01	6.02E-01	8.53E-01
9.60E-01	8.70E-01	6.45E-01	8.56E-01
9.70E-01	8.70E-01	6.92E-01	8.59E-01
9.80E-01	8.70E-01	7.44E-01	8.62E-01
9.90E-01	8.70E-01	8.03E-01	8.66E-01

α	θ	$\Phi(\alpha, \theta)$	τ
0.00E+00	8.80E-01	-2.26E-01	6.54E-01
1.00E-02	8.80E-01	-2.23E-01	6.56E-01
2.00E-02	8.80E-01	-2.20E-01	6.58E-01
3.00E-02	8.80E-01	-2.17E-01	6.60E-01
4.00E-02	8.80E-01	-2.13E-01	6.62E-01
5.00E-02	8.80E-01	-2.10E-01	6.64E-01
6.00E-02	8.80E-01	-2.07E-01	6.66E-01
7.00E-02	8.80E-01	-2.03E-01	6.69E-01
8.00E-02	8.80E-01	-2.00E-01	6.71E-01
9.00E-02	8.80E-01	-1.97E-01	6.73E-01
1.00E-01	8.80E-01	-1.93E-01	6.75E-01
1.10E-01	8.80E-01	-1.90E-01	6.77E-01
1.20E-01	8.80E-01	-1.86E-01	6.79E-01
1.30E-01	8.80E-01	-1.83E-01	6.82E-01
1.40E-01	8.80E-01	-1.79E-01	6.84E-01
1.50E-01	8.80E-01	-1.76E-01	6.86E-01
1.60E-01	8.80E-01	-1.72E-01	6.88E-01
1.70E-01	8.80E-01	-1.69E-01	6.90E-01
1.80E-01	8.80E-01	-1.65E-01	6.92E-01
1.90E-01	8.80E-01	-1.61E-01	6.94E-01
2.00E-01	8.80E-01	-1.58E-01	6.97E-01
2.10E-01	8.80E-01	-1.54E-01	6.99E-01
2.20E-01	8.80E-01	-1.50E-01	7.01E-01
2.30E-01	8.80E-01	-1.47E-01	7.03E-01
2.40E-01	8.80E-01	-1.43E-01	7.05E-01
2.50E-01	8.80E-01	-1.39E-01	7.07E-01
2.60E-01	8.80E-01	-1.35E-01	7.09E-01
2.70E-01	8.80E-01	-1.31E-01	7.12E-01
2.80E-01	8.80E-01	-1.27E-01	7.14E-01
2.90E-01	8.80E-01	-1.23E-01	7.16E-01
3.00E-01	8.80E-01	-1.19E-01	7.18E-01
3.10E-01	8.80E-01	-1.15E-01	7.20E-01
3.20E-01	8.80E-01	-1.11E-01	7.22E-01
3.30E-01	8.80E-01	-1.06E-01	7.25E-01
3.40E-01	8.80E-01	-1.02E-01	7.27E-01
3.50E-01	8.80E-01	-9.77E-02	7.29E-01
3.60E-01	8.80E-01	-9.33E-02	7.31E-01
3.70E-01	8.80E-01	-8.89E-02	7.33E-01
3.80E-01	8.80E-01	-8.44E-02	7.35E-01
3.90E-01	8.80E-01	-7.98E-02	7.37E-01
4.00E-01	8.80E-01	-7.52E-02	7.40E-01
4.10E-01	8.80E-01	-7.05E-02	7.42E-01
4.20E-01	8.80E-01	-6.57E-02	7.44E-01
4.30E-01	8.80E-01	-6.08E-02	7.46E-01
4.40E-01	8.80E-01	-5.59E-02	7.48E-01
4.50E-01	8.80E-01	-5.09E-02	7.50E-01
4.60E-01	8.80E-01	-4.58E-02	7.53E-01
4.70E-01	8.80E-01	-4.06E-02	7.55E-01
4.80E-01	8.80E-01	-3.53E-02	7.57E-01
4.90E-01	8.80E-01	-2.99E-02	7.59E-01
5.00E-01	8.80E-01	-2.45E-02	7.61E-01
5.10E-01	8.80E-01	-1.89E-02	7.63E-01
5.20E-01	8.80E-01	-1.32E-02	7.66E-01
5.30E-01	8.80E-01	-7.35E-03	7.68E-01
5.40E-01	8.80E-01	-1.40E-03	7.70E-01
5.50E-01	8.80E-01	4.67E-03	7.72E-01
5.60E-01	8.80E-01	1.09E-02	7.74E-01
5.70E-01	8.80E-01	1.72E-02	7.76E-01
5.80E-01	8.80E-01	2.37E-02	7.79E-01
5.90E-01	8.80E-01	3.04E-02	7.81E-01
6.00E-01	8.80E-01	3.72E-02	7.83E-01
6.10E-01	8.80E-01	4.43E-02	7.85E-01
6.20E-01	8.80E-01	5.15E-02	7.87E-01
6.30E-01	8.80E-01	5.89E-02	7.90E-01
6.40E-01	8.80E-01	6.65E-02	7.92E-01
6.50E-01	8.80E-01	7.43E-02	7.94E-01
6.60E-01	8.80E-01	8.24E-02	7.96E-01
6.70E-01	8.80E-01	9.08E-02	7.98E-01
6.80E-01	8.80E-01	9.94E-02	8.01E-01
6.90E-01	8.80E-01	1.08E-01	8.03E-01
7.00E-01	8.80E-01	1.18E-01	8.05E-01
7.10E-01	8.80E-01	1.27E-01	8.07E-01
7.20E-01	8.80E-01	1.37E-01	8.09E-01
7.30E-01	8.80E-01	1.47E-01	8.12E-01
7.40E-01	8.80E-01	1.58E-01	8.14E-01
7.50E-01	8.80E-01	1.69E-01	8.16E-01
7.60E-01	8.80E-01	1.81E-01	8.18E-01
7.70E-01	8.80E-01	1.93E-01	8.21E-01
7.80E-01	8.80E-01	2.06E-01	8.23E-01
7.90E-01	8.80E-01	2.19E-01	8.25E-01
8.00E-01	8.80E-01	2.33E-01	8.28E-01
8.10E-01	8.80E-01	2.48E-01	8.30E-01
8.20E-01	8.80E-01	2.63E-01	8.32E-01
8.30E-01	8.80E-01	2.80E-01	8.34E-01
8.40E-01	8.80E-01	2.97E-01	8.37E-01
8.50E-01	8.80E-01	3.15E-01	8.39E-01
8.60E-01	8.80E-01	3.35E-01	8.41E-01
8.70E-01	8.80E-01	3.56E-01	8.44E-01
8.80E-01	8.80E-01	3.78E-01	8.46E-01
8.90E-01	8.80E-01	4.02E-01	8.49E-01
9.00E-01	8.80E-01	4.28E-01	8.51E-01
9.10E-01	8.80E-01	4.56E-01	8.54E-01
9.20E-01	8.80E-01	4.86E-01	8.56E-01
9.30E-01	8.80E-01	5.20E-01	8.59E-01
9.40E-01	8.80E-01	5.56E-01	8.61E-01
9.50E-01	8.80E-01	5.96E-01	8.64E-01
9.60E-01	8.80E-01	6.40E-01	8.67E-01
9.70E-01	8.80E-01	6.89E-01	8.70E-01
9.80E-01	8.80E-01	7.45E-01	8.73E-01
9.90E-01	8.80E-01	8.08E-01	8.76E-01

α	θ	$\Phi(\alpha, \theta)$	τ
0.00E+00	8.90E-01	-2.22E-01	6.68E-01
1.00E-02	8.90E-01	-2.18E-01	6.71E-01
2.00E-02	8.90E-01	-2.15E-01	6.73E-01
3.00E-02	8.90E-01	-2.12E-01	6.75E-01
4.00E-02	8.90E-01	-2.09E-01	6.77E-01
5.00E-02	8.90E-01	-2.06E-01	6.79E-01
6.00E-02	8.90E-01	-2.02E-01	6.81E-01
7.00E-02	8.90E-01	-1.99E-01	6.84E-01
8.00E-02	8.90E-01	-1.96E-01	6.86E-01
9.00E-02	8.90E-01	-1.92E-01	6.88E-01
1.00E-01	8.90E-01	-1.89E-01	6.90E-01
1.10E-01	8.90E-01	-1.86E-01	6.92E-01
1.20E-01	8.90E-01	-1.82E-01	6.

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	9.00E-01	-2.16E-01	6.84E-01
1.00E-02	9.00E-01	-2.13E-01	6.86E-01
2.00E-02	9.00E-01	-2.10E-01	6.88E-01
3.00E-02	9.00E-01	-2.07E-01	6.90E-01
4.00E-02	9.00E-01	-2.04E-01	6.93E-01
5.00E-02	9.00E-01	-2.00E-01	6.95E-01
6.00E-02	9.00E-01	-1.97E-01	6.97E-01
7.00E-02	9.00E-01	-1.94E-01	6.99E-01
8.00E-02	9.00E-01	-1.91E-01	7.01E-01
9.00E-02	9.00E-01	-1.88E-01	7.04E-01
1.00E-01	9.00E-01	-1.84E-01	7.06E-01
1.10E-01	9.00E-01	-1.81E-01	7.08E-01
1.20E-01	9.00E-01	-1.78E-01	7.10E-01
1.30E-01	9.00E-01	-1.74E-01	7.12E-01
1.40E-01	9.00E-01	-1.71E-01	7.15E-01
1.50E-01	9.00E-01	-1.68E-01	7.17E-01
1.60E-01	9.00E-01	-1.64E-01	7.19E-01
1.70E-01	9.00E-01	-1.61E-01	7.21E-01
1.80E-01	9.00E-01	-1.57E-01	7.23E-01
1.90E-01	9.00E-01	-1.54E-01	7.25E-01
2.00E-01	9.00E-01	-1.50E-01	7.28E-01
2.10E-01	9.00E-01	-1.47E-01	7.30E-01
2.20E-01	9.00E-01	-1.43E-01	7.32E-01
2.30E-01	9.00E-01	-1.40E-01	7.34E-01
2.40E-01	9.00E-01	-1.36E-01	7.36E-01
2.50E-01	9.00E-01	-1.33E-01	7.38E-01
2.60E-01	9.00E-01	-1.29E-01	7.40E-01
2.70E-01	9.00E-01	-1.25E-01	7.43E-01
2.80E-01	9.00E-01	-1.22E-01	7.45E-01
2.90E-01	9.00E-01	-1.18E-01	7.47E-01
3.00E-01	9.00E-01	-1.14E-01	7.49E-01
3.10E-01	9.00E-01	-1.10E-01	7.51E-01
3.20E-01	9.00E-01	-1.06E-01	7.53E-01
3.30E-01	9.00E-01	-1.02E-01	7.55E-01
3.40E-01	9.00E-01	-9.83E-02	7.58E-01
3.50E-01	9.00E-01	-9.43E-02	7.60E-01
3.60E-01	9.00E-01	-9.03E-02	7.62E-01
3.70E-01	9.00E-01	-8.61E-02	7.64E-01
3.80E-01	9.00E-01	-8.20E-02	7.66E-01
3.90E-01	9.00E-01	-7.78E-02	7.68E-01
4.00E-01	9.00E-01	-7.35E-02	7.70E-01
4.10E-01	9.00E-01	-6.92E-02	7.72E-01
4.20E-01	9.00E-01	-6.48E-02	7.74E-01
4.30E-01	9.00E-01	-6.03E-02	7.77E-01
4.40E-01	9.00E-01	-5.58E-02	7.79E-01
4.50E-01	9.00E-01	-5.12E-02	7.81E-01
4.60E-01	9.00E-01	-4.65E-02	7.83E-01
4.70E-01	9.00E-01	-4.17E-02	7.85E-01
4.80E-01	9.00E-01	-3.69E-02	7.87E-01
4.90E-01	9.00E-01	-3.20E-02	7.89E-01
5.00E-01	9.00E-01	-2.70E-02	7.91E-01
5.10E-01	9.00E-01	-2.19E-02	7.93E-01
5.20E-01	9.00E-01	-1.66E-02	7.95E-01
5.30E-01	9.00E-01	-1.13E-02	7.97E-01
5.40E-01	9.00E-01	-5.90E-03	8.00E-01
5.50E-01	9.00E-01	-3.61E-04	8.02E-01
5.60E-01	9.00E-01	5.31E-03	8.04E-01
5.70E-01	9.00E-01	1.11E-02	8.06E-01
5.80E-01	9.00E-01	1.70E-02	8.08E-01
5.90E-01	9.00E-01	2.31E-02	8.10E-01
6.00E-01	9.00E-01	2.94E-02	8.12E-01
6.10E-01	9.00E-01	3.58E-02	8.14E-01
6.20E-01	9.00E-01	4.24E-02	8.16E-01
6.30E-01	9.00E-01	4.91E-02	8.18E-01
6.40E-01	9.00E-01	5.61E-02	8.20E-01
6.50E-01	9.00E-01	6.33E-02	8.22E-01
6.60E-01	9.00E-01	7.07E-02	8.24E-01
6.70E-01	9.00E-01	7.83E-02	8.26E-01
6.80E-01	9.00E-01	8.62E-02	8.28E-01
6.90E-01	9.00E-01	9.44E-02	8.31E-01
7.00E-01	9.00E-01	1.03E-01	8.33E-01
7.10E-01	9.00E-01	1.12E-01	8.35E-01
7.20E-01	9.00E-01	1.21E-01	8.37E-01
7.30E-01	9.00E-01	1.30E-01	8.39E-01
7.40E-01	9.00E-01	1.40E-01	8.41E-01
7.50E-01	9.00E-01	1.51E-01	8.43E-01
7.60E-01	9.00E-01	1.61E-01	8.45E-01
7.70E-01	9.00E-01	1.73E-01	8.47E-01
7.80E-01	9.00E-01	1.85E-01	8.49E-01
7.90E-01	9.00E-01	1.97E-01	8.51E-01
8.00E-01	9.00E-01	2.10E-01	8.53E-01
8.10E-01	9.00E-01	2.24E-01	8.55E-01
8.20E-01	9.00E-01	2.39E-01	8.58E-01
8.30E-01	9.00E-01	2.55E-01	8.60E-01
8.40E-01	9.00E-01	2.72E-01	8.62E-01
8.50E-01	9.00E-01	2.89E-01	8.64E-01
8.60E-01	9.00E-01	3.08E-01	8.66E-01
8.70E-01	9.00E-01	3.29E-01	8.68E-01
8.80E-01	9.00E-01	3.51E-01	8.70E-01
8.90E-01	9.00E-01	3.75E-01	8.73E-01
9.00E-01	9.00E-01	4.01E-01	8.75E-01
9.10E-01	9.00E-01	4.29E-01	8.77E-01
9.20E-01	9.00E-01	4.61E-01	8.79E-01
9.30E-01	9.00E-01	4.95E-01	8.81E-01
9.40E-01	9.00E-01	5.33E-01	8.84E-01
9.50E-01	9.00E-01	5.76E-01	8.86E-01
9.60E-01	9.00E-01	6.24E-01	8.89E-01
9.70E-01	9.00E-01	6.78E-01	8.91E-01
9.80E-01	9.00E-01	7.41E-01	8.94E-01
9.90E-01	9.00E-01	8.14E-01	8.97E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	9.10E-01	-2.10E-01	7.00E-01
1.00E-02	9.10E-01	-2.07E-01	7.02E-01
2.00E-02	9.10E-01	-2.04E-01	7.04E-01
3.00E-02	9.10E-01	-2.01E-01	7.07E-01
4.00E-02	9.10E-01	-1.98E-01	7.09E-01
5.00E-02	9.10E-01	-1.95E-01	7.11E-01
6.00E-02	9.10E-01	-1.91E-01	7.13E-01
7.00E-02	9.10E-01	-1.88E-01	7.16E-01
8.00E-02	9.10E-01	-1.85E-01	7.18E-01
9.00E-02	9.10E-01	-1.82E-01	7.20E-01
1.00E-01	9.10E-01	-1.79E-01	7.22E-01
1.10E-01	9.10E-01	-1.76E-01	7.24E-01
1.20E-01	9.10E-01	-1.72E-01	7.27E-01
1.30E-01	9.10E-01	-1.69E-01	7.29E-01
1.40E-01	9.10E-01	-1.66E-01	7.31E-01
1.50E-01	9.10E-01	-1.63E-01	7.33E-01
1.60E-01	9.10E-01	-1.59E-01	7.35E-01
1.70E-01	9.10E-01	-1.56E-01	7.38E-01
1.80E-01	9.10E-01	-1.53E-01	7.40E-01
1.90E-01	9.10E-01	-1.49E-01	7.42E-01
2.00E-01	9.10E-01	-1.46E-01	7.44E-01
2.10E-01	9.10E-01	-1.43E-01	7.46E-01
2.20E-01	9.10E-01	-1.39E-01	7.48E-01
2.30E-01	9.10E-01	-1.36E-01	7.51E-01
2.40E-01	9.10E-01	-1.32E-01	7.53E-01
2.50E-01	9.10E-01	-1.29E-01	7.55E-01
2.60E-01	9.10E-01	-1.25E-01	7.57E-01
2.70E-01	9.10E-01	-1.22E-01	7.59E-01
2.80E-01	9.10E-01	-1.18E-01	7.61E-01
2.90E-01	9.10E-01	-1.14E-01	7.63E-01
3.00E-01	9.10E-01	-1.11E-01	7.65E-01
3.10E-01	9.10E-01	-1.07E-01	7.68E-01
3.20E-01	9.10E-01	-1.03E-01	7.70E-01
3.30E-01	9.10E-01	-9.96E-02	7.72E-01
3.40E-01	9.10E-01	-9.59E-02	7.74E-01
3.50E-01	9.10E-01	-9.20E-02	7.76E-01
3.60E-01	9.10E-01	-8.81E-02	7.78E-01
3.70E-01	9.10E-01	-8.42E-02	7.80E-01
3.80E-01	9.10E-01	-8.02E-02	7.82E-01
3.90E-01	9.10E-01	-7.62E-02	7.84E-01
4.00E-01	9.10E-01	-7.22E-02	7.86E-01
4.10E-01	9.10E-01	-6.80E-02	7.88E-01
4.20E-01	9.10E-01	-6.39E-02	7.90E-01
4.30E-01	9.10E-01	-5.96E-02	7.93E-01
4.40E-01	9.10E-01	-5.53E-02	7.95E-01
4.50E-01	9.10E-01	-5.10E-02	7.97E-01
4.60E-01	9.10E-01	-4.65E-02	7.99E-01
4.70E-01	9.10E-01	-4.20E-02	8.01E-01
4.80E-01	9.10E-01	-3.74E-02	8.03E-01
4.90E-01	9.10E-01	-3.28E-02	8.05E-01
5.00E-01	9.10E-01	-2.80E-02	8.07E-01
5.10E-01	9.10E-01	-2.32E-02	8.09E-01
5.20E-01	9.10E-01	-1.83E-02	8.11E-01
5.30E-01	9.10E-01	-1.33E-02	8.13E-01
5.40E-01	9.10E-01	-8.12E-03	8.15E-01
5.50E-01	9.10E-01	-2.88E-03	8.17E-01
5.60E-01	9.10E-01	2.47E-03	8.19E-01
5.70E-01	9.10E-01	7.95E-03	8.21E-01
5.80E-01	9.10E-01	1.36E-02	8.23E-01
5.90E-01	9.10E-01	1.93E-02	8.25E-01
6.00E-01	9.10E-01	2.52E-02	8.27E-01
6.10E-01	9.10E-01	3.12E-02	8.29E-01
6.20E-01	9.10E-01	3.75E-02	8.31E-01
6.30E-01	9.10E-01	4.39E-02	8.33E-01
6.40E-01	9.10E-01	5.04E-02	8.35E-01
6.50E-01	9.10E-01	5.72E-02	8.37E-01
6.60E-01	9.10E-01	6.42E-02	8.39E-01
6.70E-01	9.10E-01	7.15E-02	8.41E-01
6.80E-01	9.10E-01	7.89E-02	8.43E-01
6.90E-01	9.10E-01	8.67E-02	8.45E-01
7.00E-01	9.10E-01	9.47E-02	8.47E-01
7.10E-01	9.10E-01	1.03E-01	8.49E-01
7.20E-01	9.10E-01	1.12E-01	8.51E-01
7.30E-01	9.10E-01	1.21E-01	8.53E-01
7.40E-01	9.10E-01	1.30E-01	8.55E-01
7.50E-01	9.10E-01	1.40E-01	8.57E-01
7.60E-01	9.10E-01	1.50E-01	8.59E-01
7.70E-01	9.10E-01	1.61E-01	8.61E-01
7.80E-01	9.10E-01	1.73E-01	8.63E-01
7.90E-01	9.10E-01	1.85E-01	8.65E-01
8.00E-01	9.10E-01	1.97E-01	8.67E-01
8.10E-01	9.10E-01	2.11E-01	8.68E-01
8.20E-01	9.10E-01	2.25E-01	8.70E-01
8.30E-01	9.10E-01	2.40E-01	8.72E-01
8.40E-01	9.10E-01	2.56E-01	8.74E-01
8.50E-01	9.10E-01	2.74E-01	8.76E-01
8.60E-01	9.10E-01	2.92E-01	8.78E-01
8.70E-01	9.10E-01	3.13E-01	8.80E-01
8.80E-01	9.10E-01	3.34E-01	8.82E-01
8.90E-01	9.10E-01	3.58E-01	8.85E-01
9.00E-01	9.10E-01	3.84E-01	8.87E-01
9.10E-01	9.10E-01	4.12E-01	8.89E-01
9.20E-01	9.10E-01	4.44E-01	8.91E-01
9.30E-01	9.10E-01	4.78E-01	8.93E-01
9.40E-01	9.10E-01	5.17E-01	8.95E-01
9.50E-01	9.10E-01	5.61E-01	8.97E-01
9.60E-01	9.10E-01	6.11E-01	8.99E-01
9.70E-01	9.10E-01	6.69E-01	9.02E-01
9.80E-01	9.10E-01	7.36E-01	9.04E-01
9.90E-01	9.10E-01	8.15E-01	9.07E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	9.20E-01	-2.03E-01	7.17E-01
1.00E-02	9.20E-01	-2.00E-01	7.19E-01
2.00E-02	9.20E-01	-1.97E-01	7.22E-01
3.00E-02	9.20E-01	-1.94E-01	7.24E-01
4.00E-02	9.20E-01	-1.91E-01	7.26E-01
5.00E-02	9.20E-01	-1.88E-01	7.28E-01
6.00E-02	9.20E-01	-1.85E-01	7.31E-01
7.00E-02	9.20E-01	-1.82E-01	7.33E-01
8.00E-02	9.20E-01	-1.79E-01	7.35E-01
9.00E-02	9.20E-01	-1.75E-01	7.37E-01
1.00E-01	9.20E-01	-1.72E-01	7.40E-01
1.10E-01	9.20E-01	-1.69E-01	7.42E-01
1.20E-01	9.20E-01	-1.66E-01	7.44E

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	9.30E-01	-1.95E-01	7.35E-01
1.00E-02	9.30E-01	-1.92E-01	7.38E-01
2.00E-02	9.30E-01	-1.89E-01	7.40E-01
3.00E-02	9.30E-01	-1.86E-01	7.42E-01
4.00E-02	9.30E-01	-1.83E-01	7.45E-01
5.00E-02	9.30E-01	-1.80E-01	7.47E-01
6.00E-02	9.30E-01	-1.77E-01	7.49E-01
7.00E-02	9.30E-01	-1.74E-01	7.51E-01
8.00E-02	9.30E-01	-1.71E-01	7.53E-01
9.00E-02	9.30E-01	-1.68E-01	7.56E-01
1.00E-01	9.30E-01	-1.65E-01	7.58E-01
1.10E-01	9.30E-01	-1.62E-01	7.60E-01
1.20E-01	9.30E-01	-1.59E-01	7.62E-01
1.30E-01	9.30E-01	-1.56E-01	7.64E-01
1.40E-01	9.30E-01	-1.53E-01	7.67E-01
1.50E-01	9.30E-01	-1.50E-01	7.69E-01
1.60E-01	9.30E-01	-1.47E-01	7.71E-01
1.70E-01	9.30E-01	-1.44E-01	7.73E-01
1.80E-01	9.30E-01	-1.41E-01	7.75E-01
1.90E-01	9.30E-01	-1.38E-01	7.77E-01
2.00E-01	9.30E-01	-1.34E-01	7.80E-01
2.10E-01	9.30E-01	-1.31E-01	7.82E-01
2.20E-01	9.30E-01	-1.28E-01	7.84E-01
2.30E-01	9.30E-01	-1.25E-01	7.86E-01
2.40E-01	9.30E-01	-1.22E-01	7.88E-01
2.50E-01	9.30E-01	-1.19E-01	7.90E-01
2.60E-01	9.30E-01	-1.16E-01	7.92E-01
2.70E-01	9.30E-01	-1.12E-01	7.94E-01
2.80E-01	9.30E-01	-1.09E-01	7.96E-01
2.90E-01	9.30E-01	-1.06E-01	7.98E-01
3.00E-01	9.30E-01	-1.03E-01	8.00E-01
3.10E-01	9.30E-01	-9.93E-02	8.02E-01
3.20E-01	9.30E-01	-9.59E-02	8.04E-01
3.30E-01	9.30E-01	-9.26E-02	8.06E-01
3.40E-01	9.30E-01	-8.92E-02	8.08E-01
3.50E-01	9.30E-01	-8.58E-02	8.10E-01
3.60E-01	9.30E-01	-8.23E-02	8.12E-01
3.70E-01	9.30E-01	-7.88E-02	8.14E-01
3.80E-01	9.30E-01	-7.53E-02	8.16E-01
3.90E-01	9.30E-01	-7.18E-02	8.18E-01
4.00E-01	9.30E-01	-6.82E-02	8.20E-01
4.10E-01	9.30E-01	-6.45E-02	8.22E-01
4.20E-01	9.30E-01	-6.09E-02	8.24E-01
4.30E-01	9.30E-01	-5.71E-02	8.26E-01
4.40E-01	9.30E-01	-5.34E-02	8.28E-01
4.50E-01	9.30E-01	-4.96E-02	8.30E-01
4.60E-01	9.30E-01	-4.57E-02	8.32E-01
4.70E-01	9.30E-01	-4.17E-02	8.34E-01
4.80E-01	9.30E-01	-3.77E-02	8.36E-01
4.90E-01	9.30E-01	-3.37E-02	8.38E-01
5.00E-01	9.30E-01	-2.96E-02	8.40E-01
5.10E-01	9.30E-01	-2.54E-02	8.41E-01
5.20E-01	9.30E-01	-2.11E-02	8.43E-01
5.30E-01	9.30E-01	-1.67E-02	8.45E-01
5.40E-01	9.30E-01	-1.23E-02	8.47E-01
5.50E-01	9.30E-01	-7.76E-03	8.49E-01
5.60E-01	9.30E-01	-3.13E-03	8.51E-01
5.70E-01	9.30E-01	1.60E-03	8.53E-01
5.80E-01	9.30E-01	6.44E-03	8.54E-01
5.90E-01	9.30E-01	1.14E-02	8.56E-01
6.00E-01	9.30E-01	1.65E-02	8.58E-01
6.10E-01	9.30E-01	2.17E-02	8.60E-01
6.20E-01	9.30E-01	2.71E-02	8.62E-01
6.30E-01	9.30E-01	3.26E-02	8.64E-01
6.40E-01	9.30E-01	3.83E-02	8.65E-01
6.50E-01	9.30E-01	4.41E-02	8.67E-01
6.60E-01	9.30E-01	5.02E-02	8.69E-01
6.70E-01	9.30E-01	5.64E-02	8.71E-01
6.80E-01	9.30E-01	6.29E-02	8.72E-01
6.90E-01	9.30E-01	6.96E-02	8.74E-01
7.00E-01	9.30E-01	7.66E-02	8.76E-01
7.10E-01	9.30E-01	8.38E-02	8.78E-01
7.20E-01	9.30E-01	9.14E-02	8.79E-01
7.30E-01	9.30E-01	9.92E-02	8.81E-01
7.40E-01	9.30E-01	1.07E-01	8.83E-01
7.50E-01	9.30E-01	1.16E-01	8.85E-01
7.60E-01	9.30E-01	1.25E-01	8.86E-01
7.70E-01	9.30E-01	1.35E-01	8.88E-01
7.80E-01	9.30E-01	1.45E-01	8.90E-01
7.90E-01	9.30E-01	1.55E-01	8.92E-01
8.00E-01	9.30E-01	1.67E-01	8.93E-01
8.10E-01	9.30E-01	1.79E-01	8.95E-01
8.20E-01	9.30E-01	1.92E-01	8.97E-01
8.30E-01	9.30E-01	2.05E-01	8.98E-01
8.40E-01	9.30E-01	2.20E-01	9.00E-01
8.50E-01	9.30E-01	2.36E-01	9.02E-01
8.60E-01	9.30E-01	2.53E-01	9.04E-01
8.70E-01	9.30E-01	2.72E-01	9.05E-01
8.80E-01	9.30E-01	2.93E-01	9.07E-01
8.90E-01	9.30E-01	3.15E-01	9.09E-01
9.00E-01	9.30E-01	3.40E-01	9.11E-01
9.10E-01	9.30E-01	3.68E-01	9.12E-01
9.20E-01	9.30E-01	3.99E-01	9.14E-01
9.30E-01	9.30E-01	4.34E-01	9.16E-01
9.40E-01	9.30E-01	4.74E-01	9.18E-01
9.50E-01	9.30E-01	5.20E-01	9.20E-01
9.60E-01	9.30E-01	5.74E-01	9.21E-01
9.70E-01	9.30E-01	6.38E-01	9.23E-01
9.80E-01	9.30E-01	7.15E-01	9.25E-01
9.90E-01	9.30E-01	8.10E-01	9.27E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	9.40E-01	-1.85E-01	7.55E-01
1.00E-02	9.40E-01	-1.82E-01	7.57E-01
2.00E-02	9.40E-01	-1.79E-01	7.60E-01
3.00E-02	9.40E-01	-1.76E-01	7.62E-01
4.00E-02	9.40E-01	-1.74E-01	7.64E-01
5.00E-02	9.40E-01	-1.71E-01	7.66E-01
6.00E-02	9.40E-01	-1.68E-01	7.69E-01
7.00E-02	9.40E-01	-1.65E-01	7.71E-01
8.00E-02	9.40E-01	-1.62E-01	7.73E-01
9.00E-02	9.40E-01	-1.59E-01	7.75E-01
1.00E-01	9.40E-01	-1.56E-01	7.77E-01
1.10E-01	9.40E-01	-1.53E-01	7.80E-01
1.20E-01	9.40E-01	-1.51E-01	7.82E-01
1.30E-01	9.40E-01	-1.48E-01	7.84E-01
1.40E-01	9.40E-01	-1.45E-01	7.86E-01
1.50E-01	9.40E-01	-1.42E-01	7.88E-01
1.60E-01	9.40E-01	-1.39E-01	7.90E-01
1.70E-01	9.40E-01	-1.36E-01	7.93E-01
1.80E-01	9.40E-01	-1.33E-01	7.95E-01
1.90E-01	9.40E-01	-1.30E-01	7.97E-01
2.00E-01	9.40E-01	-1.27E-01	7.99E-01
2.10E-01	9.40E-01	-1.24E-01	8.01E-01
2.20E-01	9.40E-01	-1.21E-01	8.03E-01
2.30E-01	9.40E-01	-1.18E-01	8.05E-01
2.40E-01	9.40E-01	-1.15E-01	8.07E-01
2.50E-01	9.40E-01	-1.12E-01	8.09E-01
2.60E-01	9.40E-01	-1.09E-01	8.11E-01
2.70E-01	9.40E-01	-1.06E-01	8.13E-01
2.80E-01	9.40E-01	-1.03E-01	8.15E-01
2.90E-01	9.40E-01	-1.00E-01	8.17E-01
3.00E-01	9.40E-01	-9.73E-02	8.19E-01
3.10E-01	9.40E-01	-9.42E-02	8.21E-01
3.20E-01	9.40E-01	-9.11E-02	8.23E-01
3.30E-01	9.40E-01	-8.79E-02	8.25E-01
3.40E-01	9.40E-01	-8.48E-02	8.27E-01
3.50E-01	9.40E-01	-8.16E-02	8.29E-01
3.60E-01	9.40E-01	-7.84E-02	8.31E-01
3.70E-01	9.40E-01	-7.52E-02	8.33E-01
3.80E-01	9.40E-01	-7.19E-02	8.35E-01
3.90E-01	9.40E-01	-6.86E-02	8.37E-01
4.00E-01	9.40E-01	-6.53E-02	8.39E-01
4.10E-01	9.40E-01	-6.20E-02	8.40E-01
4.20E-01	9.40E-01	-5.86E-02	8.42E-01
4.30E-01	9.40E-01	-5.51E-02	8.44E-01
4.40E-01	9.40E-01	-5.17E-02	8.46E-01
4.50E-01	9.40E-01	-4.82E-02	8.48E-01
4.60E-01	9.40E-01	-4.46E-02	8.50E-01
4.70E-01	9.40E-01	-4.10E-02	8.52E-01
4.80E-01	9.40E-01	-3.74E-02	8.53E-01
4.90E-01	9.40E-01	-3.36E-02	8.55E-01
5.00E-01	9.40E-01	-2.99E-02	8.57E-01
5.10E-01	9.40E-01	-2.60E-02	8.59E-01
5.20E-01	9.40E-01	-2.21E-02	8.60E-01
5.30E-01	9.40E-01	-1.82E-02	8.62E-01
5.40E-01	9.40E-01	-1.41E-02	8.64E-01
5.50E-01	9.40E-01	-1.00E-02	8.66E-01
5.60E-01	9.40E-01	-5.79E-03	8.68E-01
5.70E-01	9.40E-01	-1.48E-03	8.69E-01
5.80E-01	9.40E-01	2.92E-03	8.71E-01
5.90E-01	9.40E-01	7.42E-03	8.73E-01
6.00E-01	9.40E-01	1.20E-02	8.74E-01
6.10E-01	9.40E-01	1.68E-02	8.76E-01
6.20E-01	9.40E-01	2.16E-02	8.78E-01
6.30E-01	9.40E-01	2.66E-02	8.80E-01
6.40E-01	9.40E-01	3.18E-02	8.81E-01
6.50E-01	9.40E-01	3.71E-02	8.83E-01
6.60E-01	9.40E-01	4.26E-02	8.85E-01
6.70E-01	9.40E-01	4.82E-02	8.86E-01
6.80E-01	9.40E-01	5.41E-02	8.88E-01
6.90E-01	9.40E-01	6.02E-02	8.89E-01
7.00E-01	9.40E-01	6.65E-02	8.91E-01
7.10E-01	9.40E-01	7.31E-02	8.93E-01
7.20E-01	9.40E-01	8.00E-02	8.94E-01
7.30E-01	9.40E-01	8.72E-02	8.96E-01
7.40E-01	9.40E-01	9.47E-02	8.98E-01
7.50E-01	9.40E-01	1.03E-01	8.99E-01
7.60E-01	9.40E-01	1.11E-01	9.01E-01
7.70E-01	9.40E-01	1.20E-01	9.02E-01
7.80E-01	9.40E-01	1.29E-01	9.04E-01
7.90E-01	9.40E-01	1.39E-01	9.06E-01
8.00E-01	9.40E-01	1.49E-01	9.07E-01
8.10E-01	9.40E-01	1.60E-01	9.09E-01
8.20E-01	9.40E-01	1.72E-01	9.10E-01
8.30E-01	9.40E-01	1.85E-01	9.12E-01
8.40E-01	9.40E-01	1.99E-01	9.13E-01
8.50E-01	9.40E-01	2.13E-01	9.15E-01
8.60E-01	9.40E-01	2.30E-01	9.16E-01
8.70E-01	9.40E-01	2.47E-01	9.18E-01
8.80E-01	9.40E-01	2.67E-01	9.20E-01
8.90E-01	9.40E-01	2.88E-01	9.21E-01
9.00E-01	9.40E-01	3.12E-01	9.23E-01
9.10E-01	9.40E-01	3.39E-01	9.24E-01
9.20E-01	9.40E-01	3.70E-01	9.26E-01
9.30E-01	9.40E-01	4.04E-01	9.27E-01
9.40E-01	9.40E-01	4.45E-01	9.29E-01
9.50E-01	9.40E-01	4.91E-01	9.31E-01
9.60E-01	9.40E-01	5.47E-01	9.32E-01
9.70E-01	9.40E-01	6.14E-01	9.34E-01
9.80E-01	9.40E-01	6.97E-01	9.36E-01
9.90E-01	9.40E-01	8.02E-01	9.38E-01

α	θ	$\Phi(\alpha,\theta)$	τ
0.00E+00	9.50E-01	-1.74E-01	7.76E-01
1.00E-02	9.50E-01	-1.71E-01	7.79E-01
2.00E-02	9.50E-01	-1.68E-01	7.81E-01
3.00E-02	9.50E-01	-1.65E-01	7.83E-01
4.00E-02	9.50E-01	-1.63E-01	7.85E-01
5.00E-02	9.50E-01	-1.60E-01	7.88E-01
6.00E-02	9.50E-01	-1.57E-01	7.90E-01
7.00E-02	9.50E-01	-1.54E-01	7.92E-01
8.00E-02	9.50E-01	-1.52E-01	7.94E-01
9.00E-02	9.50E-01	-1.49E-01	7.96E-01
1.00E-01	9.50E-01	-1.46E-01	7.99E-01
1.10E-01	9.50E-01	-1.43E-01	8.01E-01
1.20E-01	9.50E-01	-1.41E-01	8.03E

α	β	$\Phi(\alpha, \beta)$	τ
0.00E+00	9.60E-01	-1.60E-01	8.00E-01
1.00E-02	9.60E-01	-1.57E-01	8.02E-01
2.00E-02	9.60E-01	-1.55E-01	8.04E-01
3.00E-02	9.60E-01	-1.52E-01	8.07E-01
4.00E-02	9.60E-01	-1.49E-01	8.09E-01
5.00E-02	9.60E-01	-1.47E-01	8.11E-01
6.00E-02	9.60E-01	-1.44E-01	8.13E-01
7.00E-02	9.60E-01	-1.42E-01	8.15E-01
8.00E-02	9.60E-01	-1.39E-01	8.18E-01
9.00E-02	9.60E-01	-1.37E-01	8.20E-01
1.00E-01	9.60E-01	-1.34E-01	8.22E-01
1.10E-01	9.60E-01	-1.31E-01	8.24E-01
1.20E-01	9.60E-01	-1.29E-01	8.26E-01
1.30E-01	9.60E-01	-1.26E-01	8.28E-01
1.40E-01	9.60E-01	-1.24E-01	8.30E-01
1.50E-01	9.60E-01	-1.21E-01	8.32E-01
1.60E-01	9.60E-01	-1.19E-01	8.34E-01
1.70E-01	9.60E-01	-1.16E-01	8.36E-01
1.80E-01	9.60E-01	-1.14E-01	8.38E-01
1.90E-01	9.60E-01	-1.11E-01	8.40E-01
2.00E-01	9.60E-01	-1.08E-01	8.42E-01
2.10E-01	9.60E-01	-1.06E-01	8.44E-01
2.20E-01	9.60E-01	-1.03E-01	8.46E-01
2.30E-01	9.60E-01	-1.01E-01	8.48E-01
2.40E-01	9.60E-01	-9.83E-02	8.50E-01
2.50E-01	9.60E-01	-9.58E-02	8.52E-01
2.60E-01	9.60E-01	-9.33E-02	8.53E-01
2.70E-01	9.60E-01	-9.07E-02	8.55E-01
2.80E-01	9.60E-01	-8.82E-02	8.57E-01
2.90E-01	9.60E-01	-8.56E-02	8.59E-01
3.00E-01	9.60E-01	-8.30E-02	8.61E-01
3.10E-01	9.60E-01	-8.05E-02	8.63E-01
3.20E-01	9.60E-01	-7.79E-02	8.64E-01
3.30E-01	9.60E-01	-7.53E-02	8.66E-01
3.40E-01	9.60E-01	-7.27E-02	8.68E-01
3.50E-01	9.60E-01	-7.01E-02	8.70E-01
3.60E-01	9.60E-01	-6.75E-02	8.71E-01
3.70E-01	9.60E-01	-6.49E-02	8.73E-01
3.80E-01	9.60E-01	-6.23E-02	8.75E-01
3.90E-01	9.60E-01	-5.96E-02	8.76E-01
4.00E-01	9.60E-01	-5.69E-02	8.78E-01
4.10E-01	9.60E-01	-5.42E-02	8.80E-01
4.20E-01	9.60E-01	-5.15E-02	8.81E-01
4.30E-01	9.60E-01	-4.88E-02	8.83E-01
4.40E-01	9.60E-01	-4.60E-02	8.85E-01
4.50E-01	9.60E-01	-4.33E-02	8.86E-01
4.60E-01	9.60E-01	-4.05E-02	8.88E-01
4.70E-01	9.60E-01	-3.76E-02	8.89E-01
4.80E-01	9.60E-01	-3.48E-02	8.91E-01
4.90E-01	9.60E-01	-3.18E-02	8.93E-01
5.00E-01	9.60E-01	-2.89E-02	8.94E-01
5.10E-01	9.60E-01	-2.59E-02	8.96E-01
5.20E-01	9.60E-01	-2.29E-02	8.97E-01
5.30E-01	9.60E-01	-1.98E-02	8.99E-01
5.40E-01	9.60E-01	-1.67E-02	9.00E-01
5.50E-01	9.60E-01	-1.35E-02	9.02E-01
5.60E-01	9.60E-01	-1.03E-02	9.03E-01
5.70E-01	9.60E-01	-7.00E-03	9.05E-01
5.80E-01	9.60E-01	-3.63E-03	9.06E-01
5.90E-01	9.60E-01	-1.96E-04	9.08E-01
6.00E-01	9.60E-01	3.32E-03	9.09E-01
6.10E-01	9.60E-01	6.92E-03	9.10E-01
6.20E-01	9.60E-01	1.06E-02	9.12E-01
6.30E-01	9.60E-01	1.44E-02	9.13E-01
6.40E-01	9.60E-01	1.83E-02	9.15E-01
6.50E-01	9.60E-01	2.23E-02	9.16E-01
6.60E-01	9.60E-01	2.65E-02	9.17E-01
6.70E-01	9.60E-01	3.08E-02	9.19E-01
6.80E-01	9.60E-01	3.52E-02	9.20E-01
6.90E-01	9.60E-01	3.98E-02	9.21E-01
7.00E-01	9.60E-01	4.46E-02	9.23E-01
7.10E-01	9.60E-01	4.96E-02	9.24E-01
7.20E-01	9.60E-01	5.48E-02	9.25E-01
7.30E-01	9.60E-01	6.03E-02	9.27E-01
7.40E-01	9.60E-01	6.60E-02	9.28E-01
7.50E-01	9.60E-01	7.20E-02	9.29E-01
7.60E-01	9.60E-01	7.83E-02	9.30E-01
7.70E-01	9.60E-01	8.50E-02	9.32E-01
7.80E-01	9.60E-01	9.21E-02	9.33E-01
7.90E-01	9.60E-01	9.97E-02	9.34E-01
8.00E-01	9.60E-01	1.08E-01	9.35E-01
8.10E-01	9.60E-01	1.16E-01	9.37E-01
8.20E-01	9.60E-01	1.26E-01	9.38E-01
8.30E-01	9.60E-01	1.36E-01	9.39E-01
8.40E-01	9.60E-01	1.47E-01	9.40E-01
8.50E-01	9.60E-01	1.59E-01	9.41E-01
8.60E-01	9.60E-01	1.72E-01	9.43E-01
8.70E-01	9.60E-01	1.87E-01	9.44E-01
8.80E-01	9.60E-01	2.03E-01	9.45E-01
8.90E-01	9.60E-01	2.21E-01	9.46E-01
9.00E-01	9.60E-01	2.41E-01	9.47E-01
9.10E-01	9.60E-01	2.65E-01	9.49E-01
9.20E-01	9.60E-01	2.92E-01	9.50E-01
9.30E-01	9.60E-01	3.24E-01	9.51E-01
9.40E-01	9.60E-01	3.62E-01	9.52E-01
9.50E-01	9.60E-01	4.08E-01	9.53E-01
9.60E-01	9.60E-01	4.65E-01	9.55E-01
9.70E-01	9.60E-01	5.37E-01	9.56E-01
9.80E-01	9.60E-01	6.33E-01	9.57E-01
9.90E-01	9.60E-01	7.65E-01	9.58E-01

α	β	$\Phi(\alpha, \beta)$	τ
0.00E+00	9.70E-01	-1.43E-01	8.27E-01
1.00E-02	9.70E-01	-1.41E-01	8.29E-01
2.00E-02	9.70E-01	-1.38E-01	8.31E-01
3.00E-02	9.70E-01	-1.36E-01	8.33E-01
4.00E-02	9.70E-01	-1.33E-01	8.35E-01
5.00E-02	9.70E-01	-1.31E-01	8.38E-01
6.00E-02	9.70E-01	-1.29E-01	8.40E-01
7.00E-02	9.70E-01	-1.26E-01	8.42E-01
8.00E-02	9.70E-01	-1.24E-01	8.44E-01
9.00E-02	9.70E-01	-1.21E-01	8.46E-01
1.00E-01	9.70E-01	-1.19E-01	8.48E-01
1.10E-01	9.70E-01	-1.17E-01	8.50E-01
1.20E-01	9.70E-01	-1.14E-01	8.52E-01
1.30E-01	9.70E-01	-1.12E-01	8.54E-01
1.40E-01	9.70E-01	-1.10E-01	8.56E-01
1.50E-01	9.70E-01	-1.07E-01	8.58E-01
1.60E-01	9.70E-01	-1.05E-01	8.60E-01
1.70E-01	9.70E-01	-1.03E-01	8.61E-01
1.80E-01	9.70E-01	-1.00E-01	8.63E-01
1.90E-01	9.70E-01	-9.81E-02	8.65E-01
2.00E-01	9.70E-01	-9.58E-02	8.67E-01
2.10E-01	9.70E-01	-9.35E-02	8.69E-01
2.20E-01	9.70E-01	-9.13E-02	8.71E-01
2.30E-01	9.70E-01	-8.90E-02	8.72E-01
2.40E-01	9.70E-01	-8.68E-02	8.74E-01
2.50E-01	9.70E-01	-8.45E-02	8.76E-01
2.60E-01	9.70E-01	-8.23E-02	8.78E-01
2.70E-01	9.70E-01	-8.00E-02	8.79E-01
2.80E-01	9.70E-01	-7.78E-02	8.81E-01
2.90E-01	9.70E-01	-7.55E-02	8.83E-01
3.00E-01	9.70E-01	-7.33E-02	8.84E-01
3.10E-01	9.70E-01	-7.10E-02	8.86E-01
3.20E-01	9.70E-01	-6.88E-02	8.88E-01
3.30E-01	9.70E-01	-6.66E-02	8.89E-01
3.40E-01	9.70E-01	-6.43E-02	8.91E-01
3.50E-01	9.70E-01	-6.21E-02	8.93E-01
3.60E-01	9.70E-01	-5.98E-02	8.94E-01
3.70E-01	9.70E-01	-5.76E-02	8.96E-01
3.80E-01	9.70E-01	-5.53E-02	8.97E-01
3.90E-01	9.70E-01	-5.30E-02	8.99E-01
4.00E-01	9.70E-01	-5.07E-02	9.00E-01
4.10E-01	9.70E-01	-4.85E-02	9.02E-01
4.20E-01	9.70E-01	-4.62E-02	9.03E-01
4.30E-01	9.70E-01	-4.38E-02	9.05E-01
4.40E-01	9.70E-01	-4.15E-02	9.06E-01
4.50E-01	9.70E-01	-3.92E-02	9.08E-01
4.60E-01	9.70E-01	-3.68E-02	9.09E-01
4.70E-01	9.70E-01	-3.44E-02	9.10E-01
4.80E-01	9.70E-01	-3.20E-02	9.12E-01
4.90E-01	9.70E-01	-2.96E-02	9.13E-01
5.00E-01	9.70E-01	-2.71E-02	9.15E-01
5.10E-01	9.70E-01	-2.47E-02	9.16E-01
5.20E-01	9.70E-01	-2.22E-02	9.17E-01
5.30E-01	9.70E-01	-1.96E-02	9.19E-01
5.40E-01	9.70E-01	-1.70E-02	9.20E-01
5.50E-01	9.70E-01	-1.44E-02	9.21E-01
5.60E-01	9.70E-01	-1.18E-02	9.23E-01
5.70E-01	9.70E-01	-9.06E-03	9.24E-01
5.80E-01	9.70E-01	-6.31E-03	9.25E-01
5.90E-01	9.70E-01	-3.50E-03	9.26E-01
6.00E-01	9.70E-01	-6.24E-04	9.28E-01
6.10E-01	9.70E-01	2.31E-03	9.29E-01
6.20E-01	9.70E-01	5.32E-03	9.30E-01
6.30E-01	9.70E-01	8.40E-03	9.31E-01
6.40E-01	9.70E-01	1.16E-02	9.32E-01
6.50E-01	9.70E-01	1.48E-02	9.34E-01
6.60E-01	9.70E-01	1.82E-02	9.35E-01
6.70E-01	9.70E-01	2.17E-02	9.36E-01
6.80E-01	9.70E-01	2.52E-02	9.37E-01
6.90E-01	9.70E-01	2.90E-02	9.38E-01
7.00E-01	9.70E-01	3.28E-02	9.39E-01
7.10E-01	9.70E-01	3.69E-02	9.40E-01
7.20E-01	9.70E-01	4.11E-02	9.42E-01
7.30E-01	9.70E-01	4.55E-02	9.43E-01
7.40E-01	9.70E-01	5.01E-02	9.44E-01
7.50E-01	9.70E-01	5.49E-02	9.45E-01
7.60E-01	9.70E-01	6.01E-02	9.46E-01
7.70E-01	9.70E-01	6.55E-02	9.47E-01
7.80E-01	9.70E-01	7.13E-02	9.48E-01
7.90E-01	9.70E-01	7.74E-02	9.49E-01
8.00E-01	9.70E-01	8.40E-02	9.50E-01
8.10E-01	9.70E-01	9.11E-02	9.51E-01
8.20E-01	9.70E-01	9.87E-02	9.52E-01
8.30E-01	9.70E-01	1.07E-01	9.53E-01
8.40E-01	9.70E-01	1.16E-01	9.54E-01
8.50E-01	9.70E-01	1.26E-01	9.55E-01
8.60E-01	9.70E-01	1.37E-01	9.56E-01
8.70E-01	9.70E-01	1.49E-01	9.57E-01
8.80E-01	9.70E-01	1.63E-01	9.58E-01
8.90E-01	9.70E-01	1.78E-01	9.59E-01
9.00E-01	9.70E-01	1.96E-01	9.60E-01
9.10E-01	9.70E-01	2.17E-01	9.61E-01
9.20E-01	9.70E-01	2.41E-01	9.62E-01
9.30E-01	9.70E-01	2.69E-01	9.63E-01
9.40E-01	9.70E-01	3.04E-01	9.64E-01
9.50E-01	9.70E-01	3.47E-01	9.65E-01
9.60E-01	9.70E-01	4.02E-01	9.66E-01
9.70E-01	9.70E-01	4.74E-01	9.67E-01
9.80E-01	9.70E-01	5.75E-01	9.68E-01
9.90E-01	9.70E-01	7.24E-01	9.69E-01

α	β	$\Phi(\alpha, \beta)$	τ
0.00E+00	9.80E-01	-1.21E-01	8.59E-01
1.00E-02	9.80E-01	-1.19E-01	8.61E-01
2.00E-02	9.80E-01	-1.17E-01	8.63E-01
3.00E-02	9.80E-01	-1.15E-01	8.65E-01
4.00E-02	9.80E-01	-1.12E-01	8.67E-01
5.00E-02	9.80E-01	-1.10E-01	8.69E-01
6.00E-02	9.80E-01	-1.08E-01	8.71E-01
7.00E-02	9.80E-01	-1.06E-01	8.73E-01
8.00E-02	9.80E-01	-1.04E-01	8.74E-01
9.00E-02	9.80E-01	-1.02E-01	8.76E-01
1.00E-01	9.80E-01	-9.97E-02	8.78E-01
1.10E-01	9.80E-01	-9.76E-02	8.80E-01
1.20E-01	9.80E-01	-9.55E-02	8.

α	θ	$\Phi(\alpha, \theta)$	τ
0.00E+00	9.90E-01	-9.00E-02	9.00E-01
1.00E-02	9.90E-01	-8.81E-02	9.02E-01
2.00E-02	9.90E-01	-8.62E-02	9.04E-01
3.00E-02	9.90E-01	-8.44E-02	9.05E-01
4.00E-02	9.90E-01	-8.26E-02	9.07E-01
5.00E-02	9.90E-01	-8.08E-02	9.09E-01
6.00E-02	9.90E-01	-7.90E-02	9.10E-01
7.00E-02	9.90E-01	-7.73E-02	9.12E-01
8.00E-02	9.90E-01	-7.55E-02	9.14E-01
9.00E-02	9.90E-01	-7.38E-02	9.15E-01
1.00E-01	9.90E-01	-7.22E-02	9.17E-01
1.10E-01	9.90E-01	-7.05E-02	9.18E-01
1.20E-01	9.90E-01	-6.89E-02	9.20E-01
1.30E-01	9.90E-01	-6.72E-02	9.21E-01
1.40E-01	9.90E-01	-6.56E-02	9.23E-01
1.50E-01	9.90E-01	-6.41E-02	9.24E-01
1.60E-01	9.90E-01	-6.25E-02	9.26E-01
1.70E-01	9.90E-01	-6.10E-02	9.27E-01
1.80E-01	9.90E-01	-5.94E-02	9.28E-01
1.90E-01	9.90E-01	-5.79E-02	9.30E-01
2.00E-01	9.90E-01	-5.65E-02	9.31E-01
2.10E-01	9.90E-01	-5.50E-02	9.32E-01
2.20E-01	9.90E-01	-5.35E-02	9.34E-01
2.30E-01	9.90E-01	-5.21E-02	9.35E-01
2.40E-01	9.90E-01	-5.07E-02	9.36E-01
2.50E-01	9.90E-01	-4.93E-02	9.37E-01
2.60E-01	9.90E-01	-4.79E-02	9.39E-01
2.70E-01	9.90E-01	-4.65E-02	9.40E-01
2.80E-01	9.90E-01	-4.52E-02	9.41E-01
2.90E-01	9.90E-01	-4.38E-02	9.42E-01
3.00E-01	9.90E-01	-4.25E-02	9.43E-01
3.10E-01	9.90E-01	-4.12E-02	9.44E-01
3.20E-01	9.90E-01	-3.99E-02	9.45E-01
3.30E-01	9.90E-01	-3.86E-02	9.47E-01
3.40E-01	9.90E-01	-3.73E-02	9.48E-01
3.50E-01	9.90E-01	-3.60E-02	9.49E-01
3.60E-01	9.90E-01	-3.48E-02	9.50E-01
3.70E-01	9.90E-01	-3.35E-02	9.51E-01
3.80E-01	9.90E-01	-3.23E-02	9.52E-01
3.90E-01	9.90E-01	-3.10E-02	9.53E-01
4.00E-01	9.90E-01	-2.98E-02	9.54E-01
4.10E-01	9.90E-01	-2.86E-02	9.55E-01
4.20E-01	9.90E-01	-2.74E-02	9.56E-01
4.30E-01	9.90E-01	-2.61E-02	9.56E-01
4.40E-01	9.90E-01	-2.49E-02	9.57E-01
4.50E-01	9.90E-01	-2.37E-02	9.58E-01
4.60E-01	9.90E-01	-2.25E-02	9.59E-01
4.70E-01	9.90E-01	-2.13E-02	9.60E-01
4.80E-01	9.90E-01	-2.01E-02	9.61E-01
4.90E-01	9.90E-01	-1.90E-02	9.62E-01
5.00E-01	9.90E-01	-1.78E-02	9.62E-01
5.10E-01	9.90E-01	-1.66E-02	9.63E-01
5.20E-01	9.90E-01	-1.54E-02	9.64E-01
5.30E-01	9.90E-01	-1.42E-02	9.65E-01
5.40E-01	9.90E-01	-1.30E-02	9.66E-01
5.50E-01	9.90E-01	-1.17E-02	9.66E-01
5.60E-01	9.90E-01	-1.05E-02	9.67E-01
5.70E-01	9.90E-01	-9.28E-03	9.68E-01
5.80E-01	9.90E-01	-8.03E-03	9.68E-01
5.90E-01	9.90E-01	-6.78E-03	9.69E-01
6.00E-01	9.90E-01	-5.50E-03	9.70E-01
6.10E-01	9.90E-01	-4.21E-03	9.71E-01
6.20E-01	9.90E-01	-2.90E-03	9.71E-01
6.30E-01	9.90E-01	-1.57E-03	9.72E-01
6.40E-01	9.90E-01	-2.09E-04	9.72E-01
6.50E-01	9.90E-01	1.18E-03	9.73E-01
6.60E-01	9.90E-01	2.60E-03	9.74E-01
6.70E-01	9.90E-01	4.06E-03	9.74E-01
6.80E-01	9.90E-01	5.56E-03	9.75E-01
6.90E-01	9.90E-01	7.10E-03	9.76E-01
7.00E-01	9.90E-01	8.70E-03	9.76E-01
7.10E-01	9.90E-01	1.04E-02	9.77E-01
7.20E-01	9.90E-01	1.21E-02	9.77E-01
7.30E-01	9.90E-01	1.39E-02	9.78E-01
7.40E-01	9.90E-01	1.57E-02	9.78E-01
7.50E-01	9.90E-01	1.77E-02	9.79E-01
7.60E-01	9.90E-01	1.98E-02	9.79E-01
7.70E-01	9.90E-01	2.20E-02	9.80E-01
7.80E-01	9.90E-01	2.43E-02	9.80E-01
7.90E-01	9.90E-01	2.68E-02	9.81E-01
8.00E-01	9.90E-01	2.95E-02	9.81E-01
8.10E-01	9.90E-01	3.24E-02	9.82E-01
8.20E-01	9.90E-01	3.55E-02	9.82E-01
8.30E-01	9.90E-01	3.89E-02	9.83E-01
8.40E-01	9.90E-01	4.27E-02	9.83E-01
8.50E-01	9.90E-01	4.68E-02	9.84E-01
8.60E-01	9.90E-01	5.15E-02	9.84E-01
8.70E-01	9.90E-01	5.67E-02	9.85E-01
8.80E-01	9.90E-01	6.27E-02	9.85E-01
8.90E-01	9.90E-01	6.96E-02	9.85E-01
9.00E-01	9.90E-01	7.76E-02	9.86E-01
9.10E-01	9.90E-01	8.72E-02	9.86E-01
9.20E-01	9.90E-01	9.88E-02	9.87E-01
9.30E-01	9.90E-01	1.13E-01	9.87E-01
9.40E-01	9.90E-01	1.32E-01	9.88E-01
9.50E-01	9.90E-01	1.56E-01	9.88E-01
9.60E-01	9.90E-01	1.90E-01	9.88E-01
9.70E-01	9.90E-01	2.41E-01	9.89E-01
9.80E-01	9.90E-01	3.25E-01	9.89E-01
9.90E-01	9.90E-01	4.92E-01	9.90E-01

α	θ	$\Phi(\alpha, \theta)$	τ
----------	----------	------------------------	--------

α	θ	$\Phi(\alpha, \theta)$	τ
----------	----------	------------------------	--------

Appendix II List of Variables and Their Descriptions

(1) Overall level:

GDP: Gross Domestic Product (NT\$ Million)
DFCF: Domestic Fixed Capital Formation (NT\$ Million)
FDI: Foreign Direct Investment (US\$ Million)
LAB: Employment (1,000 Persons)
PRI: Price (Base Year:1991)
FER: Foreign Exchange Rate

OBS.	GDP	FCF	DFDI	LAB	PRI	FER
1953	22992.0	2678.0	2.1100	2964.0	11.4700	15.6000
1954	25229.0	3337.0	9.9100	3026.0	11.5100	17.1650
1955	29981.0	3401.0	.51000	3108.0	12.6500	23.1650
1956	34410.0	4591.0	.66000	3149.0	13.9800	24.7300
1957	40173.0	5283.0	2.4000	3229.0	15.0300	24.7300
1958	44966.0	6765.0	11.7100	3340.0	15.2200	30.4300
1959	51833.0	8595.0	3.7800	3422.0	16.8300	36.2300
1960	62507.0	10361.0	5.7700	3473.0	19.0600	40.0500
1961	70043.0	11349.0	9.4600	3505.0	21.5000	40.0500
1962	77159.0	11623.0	8.9800	3541.0	22.0000	40.0500
1963	87252.0	13335.0	15.2300	3592.0	22.4900	40.0500
1964	101966.0	14872.0	15.5700	3658.0	22.4900	40.0500
1965	112627.0	19090.0	10.5100	3763.0	21.8400	40.0500
1966	126022.0	24031.0	9.5900	3856.0	22.4400	40.0500
1967	145817.0	30022.0	27.8700	4050.0	23.6500	40.0500
1968	169904.0	37319.0	27.8900	4225.0	25.0300	40.0500
1969	196845.0	43564.0	51.5200	4390.0	26.6200	40.0500
1970	226805.0	49054.0	61.9300	4576.0	27.5400	40.0500
1971	263676.0	61282.0	52.6300	4738.0	28.3600	40.0500
1972	316172.0	74978.0	27.0000	4948.0	30.0100	40.0500
1973	410405.0	102301.0	62.0000	5327.0	34.5200	38.0000
1974	549577.0	156712.0	82.0000	5486.0	45.7000	38.0000
1975	589651.0	1833312	34.0000	5521.0	46.7300	38.0000
1976	707710.0	195724.0	71.0000	5669.0	49.2600	38.0000
1977	828995.0	212590.0	51.0000	5980.0	52.3600	38.0000
1978	991602.0	255597.0	114.0000	6228.0	55.1400	36.0000
1979	1195838	335916.0	126.0000	6424.0	61.4700	36.0300
1980	1491059	456446.0	166.0000	6547.0	71.4300	36.0100
1981	1773931	494043.0	151.0000	6672.0	80.0500	37.8400
1982	1899971	490923.0	104.0000	6811.0	82.7900	39.9100
1983	2100005	478430.0	149.0000	7070.0	84.3800	40.2700
1984	2343078	496281.0	201.0000	7308.0	85.1300	39.4700
1985	2473768	466341.0	340.0000	7428.0	85.6300	39.8500
1986	2855180	517461.0	326.0000	7733.0	88.5300	35.5000
1987	3237051	622598.0	715.0000	8022.0	89.0300	28.5500
1988	3523193	733689.0	959.0000	8107.0	89.8500	28.1700
1989	3938826	869564.0	1604.0	8258.0	92.8100	26.1600
1990	4307043	965580.0	1330.0	8283.0	96.2900	27.1075
1991	4810705	1066604	1270.0	8439.0	100.0000	25.7475
1992	5337693	1240001	879.0000	8632.0	103.9300	25.4025
1993	5874513	1390902	917.0000	8745.0	107.5800	26.2600
1994	6376498	1460716	1375.0	8939.0	109.6100	26.2400
1995	6907676	1591231	1559.0	9045.0	111.9600	27.2650

Appendix II (continued)

List of Variables and their Descriptions:

(2) Manufacturing Level:

GDPMAN:	Gross Domestic Production of Manufacturing Industry (NT\$ Million)
FCFMAN:	Domestic Fixed Capital Formation of Manufacturing Industry (NT\$ Million)
LABMAN:	Employment of Manufacturing Industry (1,000 Persons)
FDI:	Foreign Direct Investment (US\$ Million)

Year.	GDPMAN	FCFMAN	LABMAN	FDI
1953	2820.0	614.0	381.00	2.1100
1954	4062.0	799.0	392.00	9.9100
1955	4685.0	698.0	411.00	.51000
1956	5721.0	1111.0	415.00	.66000
1957	7001.0	1406.0	433.00	2.4000
1958	7541.0	1634.0	471.00	11.710
1959	10045.0	1768.0	500.00	3.7800
1960	11925.0	2434.0	514.00	5.7700
1961	13228.0	2558.0	525.00	9.4600
1962	15393.0	2517.0	534.00	8.9800
1963	19177.0	3030.0	551.00	15.230
1964	23364.0	4604.0	563.00	15.570
1965	25095.0	5684.0	612.00	10.510
1966	28403.0	7167.0	633.00	9.5900
1967	36371.0	10119.0	736.00	27.870
1968	45041.0	12486.0	785.00	27.890
1969	57296.0	14122.0	841.00	51.520
1970	66168.0	17690.0	958.00	61.930
1971	82979.0	19052.0	1053.0	52.630
1972	108388.0	24489.0	1218.0	27.000
1973	151065.0	33753.0	1419.0	62.000
1974	180129.0	59830.0	1479.0	82.000
1975	182012.0	71551.0	1518.0	34.000
1976	238965.0	71429.0	1628.0	71.000
1977	283621.0	62285.0	1767.0	51.000
1978	353265.0	60446.0	1916.0	114.00
1979	429320.0	90563.0	2083.0	126.00
1980	537089.0	132397.0	2152.0	166.00
1981	631227.0	145364.0	2162.0	151.00
1982	668934.0	122349.0	2168.0	104.00
1983	754729.0	117681.0	2282.0	149.00
1984	879455.0	148670.0	2497.0	201.00
1985	929142.0	126707.0	2501.0	340.00
1986	1123528	175286.0	2635.0	326.00
1987	1258998	207438.0	2821.0	715.00
1988	1308726	229896.0	2802.0	959.00
1989	1361050	240964.0	2796.0	1604.0
1990	1434545	247873.0	2653.0	1330.0
1991	1603842	266761.0	2598.0	1270.0
1992	1692173	293137.0	2585.0	879.00
1993	1790377	304886.0	2483.0	917.00
1994	1849216	347958.0	2485.0	1375.0
1995	1948519	403470.0	2449.0	1559.0

Appendix III Ordinary Least Squares Estimation, Test (1)

Test(1)

Ordinary Least Squares Estimation

Dependent variable is DLRGDP
42 observations used for estimation from 1954 to 1995

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	.0098759	.012812	.77082[.446]
DLRCUMK5	.37764	.10093	3.7417[.001]
DLLAB	1.2410	.27206	4.5614[.000]
DLCSUMRKF	-.017748	.015982	-1.1105[.274]

R-Squared	.49162	R-Bar-Squared	.45149
S.E. of Regression	.024815	F-stat. F(3, 38)	12.2491[.000]
Mean of Dependent Variable	.081591	S.D. of Dependent Variable	.033505
Residual Sum of Squares	.023399	Equation Log-likelihood	97.7517
Akaike Info. Criterion	93.7517	Schwarz Bayesian Criterion	90.2764
DW-statistic	1.6215		

Diagnostic Tests

* Test Statistics	* LM Version	* F Version	*
***** ****			
	*	*	*
* A:Serial Correlation	*CHSQ(1)= 1.5026[.220]	*F(1, 37)= 1.3728[.249]*	
* *	* *		
* B:Functional Form	*CHSQ(1)= 3.3897[.066]	*F(1, 37)= 3.2483[.080]*	
* *	* *		
* C:Normality	*CHSQ(2)= 2.1655[.339]	* Not applicable	*
* *	* *		
* D:Heteroscedasticity	*CHSQ(1)= .11304[.737]	*F(1, 40)= .10795[.744]*	

- A:Lagrange multiplier test of residual serial correlation
- B:Ramsey's RESET test using the square of the fitted values
- C:Based on a test of skewness and kurtosis of residuals
- D:Based on the regression of squared residuals on squared fitted values

Appendix IV Ordinary Least Squares Estimation, Test (2)

Test(2)

Ordinary Least Squares Estimation			
Dependent variable is DLRGDP			
41 observations used for estimation from 1955 to 1995			
Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	.0029931	.014548	.20574[.838]
DLRCUMK5	.34771	.10546	3.2969[.002]
DLLAB	1.0444	.31108	3.3573[.002]
DLCSUMRKF	-.017988	.039265	-.45813[.650]
DLRCUMK5(-1)	.16234	.11834	1.3718[.179]
DLCSUMRKF(-1)	-.015223	.016992	-.89588[.376]
R-Squared	.51722	R-Bar-Squared	.44825
S.E. of Regression	.025180	F-stat. F(5, 35)	7.4994[.000]
Mean of Dependent Variable	.081402	S.D. of Dependent Variable	.033899
Residual Sum of Squares	.022191	Equation Log-likelihood	96.0172
Akaike Info. Criterion	90.0172	Schwarz Bayesian Criterion	84.8764
DW-statistic	1.5379		
Diagnostic Tests			
* Test Statistics	* LM Version	* F Version	*
* A:Serial Correlation	*CHSQ(1)= 2.1804[.140]	*F(1, 34)= 1.9097[.176]*	
* B:Functional Form	*CHSQ(1)= 3.3656[.067]	*F(1, 34)= 3.0406[.090]*	
* C:Normality	*CHSQ(2)= 1.7760[.411]	* Not applicable	*
* D:Heteroscedasticity	*CHSQ(1)= .33165[.565]	*F(1, 39)= .31805[.576]*	
A:Lagrange multiplier test of residual serial correlation			
B:Ramsey's RESET test using the square of the fitted values			
C:Based on a test of skewness and kurtosis of residuals			
D:Based on the regression of squared residuals on squared fitted values			

Appendix V Ordinary Least Squares Estimation, Test (3)

Test(3)

Ordinary Least Squares Estimation			
Dependent variable is DLRGDPMAN			
42 observations used for estimation from 1954 to 1995			
Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	.021536	.021650	.99474[.326]
DLRCFFM5	.19574	.20228	.96768[.339]
DLLABMAN	.81308	.22035	3.6899[.001]
DLCSUMRKF	.12748	.038096	3.3463[.002]
R-Squared	.49449	R-Bar-Squared	.45458
S.E. of Regression	.063511	F-stat. F(3, 38)	12.3905[.000]
Mean of Dependent Variable	.10142	S.D. of Dependent Variable	.085997
Residual Sum of Squares	.15328	Equation Log-likelihood	58.2814
Akaike Info. Criterion	54.2814	Schwarz Bayesian Criterion	50.8060
DW-statistic	2.1530		
Diagnostic Tests			
* Test Statistics	* LM Version	* F Version	*
* A:Serial Correlation	*CHSQ(1)= .32309[.570]	*F(1, 37)= .28683[.595]*	
* B:Functional Form	*CHSQ(1)= .047631[.827]	*F(1, 37)= .042008[.839]*	
* C:Normality	*CHSQ(2)= 7.1266[.028]	* Not applicable *	
* D:Heteroscedasticity	*CHSQ(1)= .46698[.494]	*F(1, 40)= .44974[.506]*	
A:Lagrange multiplier test of residual serial correlation			
B:Ramsey's RESET test using the square of the fitted values			
C:Based on a test of skewness and kurtosis of residuals			
D:Based on the regression of squared residuals on squared fitted values			

Appendix VI Ordinary Least Squares Estimation, Test (4)

Test(4)

Ordinary Least Squares Estimation			

Dependent variable is DLRGDPMAN			
41 observations used for estimation from 1955 to 1995			

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	.021445	.024583	.87237[.389]
DLRCFFM5	.096467	.21539	.44787[.657]
DLLABMAN	.70029	.23130	3.0276[.005]
DLCSUMRKF	-.055365	.093802	-.59023[.559]
DLRCFFM5(-1)	.40831	.23243	1.7567[.088]
DLCSUMRKF(-1)	-.033333	.038419	-.86762[.392]

R-Squared	.46107	R-Bar-Squared	.38408
S.E. of Regression	.060019	F-stat. F(5, 35)	5.9887[.000]
Mean of Dependent Variable	.095079	S.D. of Dependent Variable	.076476
Residual Sum of Squares	.12608	Equation Log-likelihood	60.4040
Akaike Info. Criterion	54.4040	Schwarz Bayesian Criterion	49.2633
DW-statistic	1.8184		

Diagnostic Tests			

* Test Statistics *	LM Version		F Version

* A:Serial Correlation	*CHSQ(1)= .34780[.555]		*F(1, 34)= .29088[.593]*
* B:Functional Form	*CHSQ(1)= .027837[.867]		*F(1, 34)= .023100[.880]*
* C:Normality	*CHSQ(2)= 5.5207[.063]		* Not applicable *
* D:Heteroscedasticity	*CHSQ(1)= .58480[.444]		*F(1, 39)= .56432[.457]*

A:Lagrange multiplier test of residual serial correlation			
B:Ramsey's RESET test using the square of the fitted values			
C:Based on a test of skewness and kurtosis of residuals			
D:Based on the regression of squared residuals on squared fitted values			

Appendix VII A Granger Test

Ordinary Least Squares Estimation			
Dependent variable is DLCSUMRKF			
37 observations used for estimation from 1959 to 1995			
Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	.055001	.033476	1.6430[.112]
DLRCFFM5(-1)	.13691	.25168	.54398[.591]
DLRCFFM5(-2)	-.014593	.29501	-.049465[.961]
DLRCFFM5(-3)	.35445	.28772	1.2319[.229]
DLRCFFM5(-4)	-.0082779	.28463	-.029082[.977]
DLRCFFM5(-5)	.11005	.26231	.41652[.678]
DLRGDPMAN(-1)	.095477	.18189	.52491[.604]
DLRGDPMAN(-2)	-.038366	.18251	-.21021[.835]
DLRGDPMAN(-3)	-.013096	.18585	-.070466[.944]
DLRGDPMAN(-4)	-.0012573	.18174	-.0069179[995]
DLRGDPMAN(-5)	-.012309	.15842	-.077698[.939]
R-Squared	.19242	F-statistic F(10, 26)	.61951[.783]
R-Bar-Squared	-.11818	S. E. of Regression	.064734
Residual Sum of Squares	.10895	Mean of Dependent Variable	.12296
S.D. of Dependent Variable	.061218	Maximum of Log-likelihood	55.3128
DW-statistic	.59900		
Diagnostic Tests			
* Test Statistics	* LM Version	* F Version	*
* A:Serial Correlation	*CHI-SQ(1) = 18.1439[.000]	*F(1, 25) = 24.0558[.000]	*
* B:Functional Form	*CHI-SQ(1) = .039797[.842]	*F(1, 25) = .026919[.871]	*
* C:Normality	*CHI-SQ(2) = 2.6270[.269]	* Not applicable	*
* D:Heteroscedasticity	*CHI-SQ(1) = .74042[.390]	*F(1, 35) = .71470[.404]	*
A:Lagrange multiplier test of residual serial correlation			
B:Ramsey's RESET test using the square of the fitted values			
C:Based on a test of skewness and kurtosis of residuals			
D:Based on the regression of squared residuals on squared fitted values			

Appendix VIII Instrumental Variables Estimation

Instrumental Variables Estimation			

Dependent variable is DLRGDPMAN			
List of instructments:			
C	DLRCFFM5(-1)	DLRCFFM5(-2)	DLRCFFM5(-3)
	DLCSUMRKF(-1)	DLCSUMRKF(-2)	DLCSUMRKF(-3)
	DLUSGDP(-1)	DLUSGDP(-2)	DLUSGDP(-3)
39 observations used for estimation from 1957 to 1995			

Regressor	Coefficient	Standard Error	T-Ratio[Prob]
C	-.057881	.057248	-1.0111[.319]
DLRCFFM5	.92823	.62059	1.4957[.144]
DLLABMAN	.46753	.37107	1.2599[.216]
DLCSUMRKF	.22222	.34843	.63777[.528]

R-Squared	-.026543	F-statistic F(3,35)	* NONE *
R-Bar-Squared	-.11453	S.E. of Regression	.082433
Residual Sum of Squares	.23783	Mean of Dependent Variable	.096158
S.D. of Dependent Variable	.078083	Value of IV Minimand	.0052844
DW-statistic	1.9828	Sargan's CHI-SQ (7)	.77766[.998]

Diagnostic Tests			

* Test Statistics	*	LM Version	* F Version *

* A:Serial Correlation	*CHSQ(1)=	.0033277[.954]	*Not applicable *
* B:Functional Form	*CHSQ(1)=	5.0881[.024]	*Not applicable *
* C:Normality	*CHSQ(2)=	14.5071[.001]	* Not applicable *
* D:Heteroscedasticity	*CHSQ(1)=	16.2420[.000]	*Not applicable *

A:Lagrange multiplier test of residual serial correlation			
B:Ramsey's RESET test using the square of the fitted values			
C:Based on a test of skewness and kurtosis of residuals			
D:Based on the regression of squared residuals on squared fitted values			

References

Aghion, Philippe and Peter Howitt (1992). "A Model of Growth through Creative Destruction," *Econometrica*, 60, 2 (March), 323-351.

Alogoskoufis, George, and Frederick van der Ploeg (1991). "Debts, deficits and growth in interdependent economies." CEPR Discussion Paper 533, London.

Anderson, J.E. (1988). *The Relative Inefficiency of Quotas*. Cambridge, MA: MIT Press,

Arrow, Kenneth J. (1962). "The Economic Implication of Learning by Doing," *Review of Economic Studies*, 29 (June), 155-173.

Balasubramanyam, V.N., Salisu, M. and Sapsford, D. (1996) "Foreign direct investment and growth in EP and IS countries." *Economic Journal* 106, 92-105.

Balasubramanyam, V.N., Salisu, M. and Sapsford, D. (1999) "Foreign direct investment as an engine of growth." *The Journal of International Trade & Economic Development* 8:1, 27-40.

Barro J. Robert and Xavier Sala-i-Martin (1995). *Economic Growth*, New York, McGraw-Hill.

Barro, J. Robert (1974). "Are Government Bonds Net Wealth?" *Journal of Political Economy*, 81, 6 (December), 1095-1117.

Bhagwati, J. (1965). "On the Equivalence of Tariff and Quotas." In R. E. Baldwin (ed.), *Trade, Growth, and the Balance of Payments*. Amsterdam, North-Holland.

Brainard, S. Lael (1993a). "A Simple Theory of Multination Corporations and Trade with a Trade-off between Proximity and Concentration." *NEBR Working Paper* No. 4239, February.

Brainard, S. Lael (1993b). "An Empirical Assessment of the Factor Proportions Explanation of Multinationals Sales." *NEBR Working Paper* No. 4580, December.

Buckley, Peter J., and Mark Casson (1976). *The Future of the Multinational Enterprise*. London, Macmillan.

Caves, Richard E. (1982). *Multinational Enterprise and Economic Analysis*. London, Cambridge University Press.

Collie, David R and Su, Yu-Tien (1998) "Trade Policy and Product Variety: When is a VER Superior to a Tariff?" *Journal of Development Economics*, 55, 1 (February), 247-253.

Corden, Max W. (1974). *Trade Policy and Economic Welfare*. Oxford: Clarendon Press.

Das, Sanghamitra (1987). "Externalities and technology transfer through multi-national corporations: a theoretical analysis." *Journal of International Economics* 22, 171-82.

Denison, Edward F. (1967). *Why Growth Rates Differ*, Washington D.C., The Brookings Institution.

Dixit, Avinash K. and Norman, Victor (1980). *Theory of International Trade*. Cambridge: Cambridge University Press.

Dixit, Avinash K. and Joseph E. Stiglitz (1977). "Monopolistic Competition and Optimum Product Diversity," *American Economic Review*, 67, 3 (June), 297-308.

Dunning, John H. (1977). "Trade, Location of Economic Activity and MNE: A Search for an Eclectic Approach." In Ohlin, B., P. Hesselborn, and P. Wijkman, eds., *The International Allocation of Economic Activity*. London, Macmillan, 395-418.

Dunning, John H. (1981). *International Production and the Multinational Enterprise*. London, George Allen and Unwin.

Ethier, Wilfred J. (1982). "National and International Returns to Scale in the Modern Theory of International Trade," *American Economic Review*, 72, 3 (June), 389-405.

Findlay, Ronald (1978). "Relative backwardness, direct foreign investment, and the transfer of technology: a simple dynamic model." *Quarterly Journal of Economics* 92, 1-16.

Glass, Amy Jocelyn, and Saggi, Kamal (1999). "Foreign Direct Investment and the Nature of R&D," *Canadian Journal of Economics*, 32, 1 (February), 92-117.

Grossman, Gene M., and Elhanan Helpman (1991a). "Quality Ladders in the Theory of Growth." *Review of Economic Studies* 58, 43-61.

Grossman, Gene M., and Elhanan Helpman (1991b). "Quality Ladder and Product Cycles." *Quarterly Journal of Economics* 106, 557-586.

Grossman, Gene M., and Elhanan Helpman (1992). *Innovation and Growth in the Global Economy*, Cambridge MA, MIT Press.

Helpman, Elhanan and Krugman, Paul R. (1989). *Trade Policy and Market Structure*. Cambridge, MA: MIT Press.

Horstmann, Ignatius J., and Markusen, J.R. (1992). "Endogenous Market Structures in International Trade," *Journal of International Economics*, 32 (February), 109-129.

Husain, Ishrat and Kwang W. Jun (1992). "Capital Flows to South Asian and ASEAN Countries." Washington, D.C.: World Bank, International Economic Department, WPS 842, January.

Krishna, K. (1989). "Trade Restrictions and Facilitating Practices." *Journal of International Economics*, 26, 251-270.

Krugman, Paul R., and Obstfeld, Maurice (1997). *International Economics: Theory and Policy*. Addison Wesley Longman.

Kuo, S. W. Y. (1983). *Taiwan: Economy in Transition*. Boulder, Co, Westview Press.

- Lee, Jungsoo, Pradumna B. Rana, and Yoshihiro Iwasaki (1986). "Effects of Foreign Capital Inflows on Developing Countries in Asia." Asian Development Bank, Economic Staff Paper No. 30, April 1986.
- Lucas, Robert E., Jr. (1988). "On the Mechanics of Economic Development." *Journal of Monetary Economics*, 22, 1 (July), 3-42.
- Maddison, Angus (1970). *Economic Progress and Policy in Developing Countries*. London, Allen & Unwin.
- Nelson, Richard R. (1974). "Less Developed Countries - Technology Transfer and Adoption: The Role of the Indigenous Scientific Community." *Economic Development and Cultural Change*, 23 (October), 61-77.
- Rebelo, Sergio (1991). "Long-Run Policy Analysis and Long-Run Growth," *Journal of Political Economy*, 99, 3 (June), 500-521.
- Romer, Paul M. (1986). "Increasing Return and Long-Run Growth," *Journal of Political Economy*, 94, 5 (October), 1002-1037.
- Romer, Paul M. (1987). "Growth Based in Increasing Returns Due to Specialization," *American Economic Review*, 77, 2 (May), 56-62.
- Romer, Paul M. (1990). "Endogenous Technological Change". *Journal of Political Economy*, 98, (October), part II, S71-S102.
- Romer, Paul. M. (1994). "New Goods, Old Theory, and the Welfare Cost of Trade Restrictions," *Journal of Development Economics* 43, 5-38.

Rotemberg, J. and Saloner, G., (1989). "Tariffs vs. quotas with implicit collusion." *Canadian Journal of Economics* 22, 237-244.

Schive, C. (1990). *The Foreign Factor: The Multinational Corporation's Contribution to the Economic Modernization of the Republic of China*. Hoover Press.

Schumpeter, Joseph A. (1934). *The Theory of Economic Development*, Cambridge MA, Harvard University Press.

Sheshinski, Eytan (1967). "Optimal Accumulation with Learning by Doing," in Karl Shell, ed., *Essays on the Theory of Optimal Economic Growth*, Cambridge MA, MIT Press, 31-52.

Solow, Robert M. (1957). "Technical Change and the Aggregate Production Function," *Review of Economics and Statistics*, 39 (August), 312-320.

Spencer, Daniel L., and Woroniak, Alexander, eds. (1967). *The transfer of Technology to Developing Countries*. New York, Praeger.

Spencer, Michael (1976). "Product Selection, Fixed Costs, and Monopolistic Competition," *Review of Economic Studies*, 43, 2 (June), 217-235.

Su, Yu-Tien (1994). " *Are Quotas Inferior to Tariffs? - An Analysis of Trade Policy and Economic Welfare*." MSc Dissertation. University of Warwick, UK.

Teece, David (1986). *The Multination Corporation and the Resource Cost of International Technological Transfer*. Cambridge, Ballinger.

Tsai, Pan-Long (1991). "Determinants of Foreign Direct Investment in Taiwan: An Alternative Approach with Time-Series Data." *World Development*, 19 (2/3), 275-285.

Uzawa, Hirofumi (1965). "Optimal Technical Change in an Aggregative Model of Economic Growth," *International Economic Review*, 6 (January), 18-31.

Vernon, Raymond. (1966). "International Investment and International Trade in the Product Cycle." *Quarterly Journal of Economics* 80, 190-207

Woodland, Allan D. (1982). *International Trade and Resource Allocation*. Amsterdam: North-Holland.

Young, Alwyn (1991). "A Tale of Two Cities: Factor Accumulation and Technical Change in Hong Kong and Singapore." *NBER Macroeconomics Annual* 1992. Olivier J. Blanchard and Stanley Fischer, eds. Cambridge, MA: The MIT Press.

Young, Alwyn (1994). "Lessons from the East Asian NICS: A contrarian view." *European Economic Review* 38, 964-973.

